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THE  
NAUTICAL ALMANAC  
AND  
ASTRONOMICAL EPHEMERIS  
FOR THE YEAR  
1804.

PUBLISHED BY ORDER OF THE  
*COMMISSIONERS OF LONGITUDE.*

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SECOND EDITION.

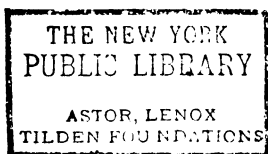
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1803.

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## EXTRACT from the ACT of PARLIAMENT concerning the Longitude, made in the Fifth Year of the Reign of His present Majesty.

**W**HEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from Time to Time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables, constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorised by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of His Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs, and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.



**EXTRACT** of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto :  
Made in the Fourteenth Year of the Reign of His present Majesty.

**B**E it enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thousand Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds if it determines the same to one Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and

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Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar or Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed entirely upon the Principles of Gravitation laid down by *Sir Isaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them at least, shall have declared

and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if it shall determine the said Longitude within one Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them.



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for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments, out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from Time to Time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by this Act,

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**E do hereby, in pursuance of the Powers vested in us by Acts of Parliament, license, authorise, and empower you to print the Nautical Almanacs and Astronomical Ephemerides for the Years 1799, 1800, 1801, 1802, 1803, 1804, and 1805; together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as have been, or may be, constructed under our Direction, and which will be delivered to you by, or by the Direction of, the Reverend Dr. Nevil Maskelyne, his Majesty's Astronomer Royal at *Greenwich*; for all which this shall be your sufficient Warrant; reserving to ourselves, nevertheless, and to our Successors, Commissioners of the aforesaid Board, or to the major Part of them, Power to revoke and annul the Appointment hereby made, by Writing signed by us, or them, whenever we or they shall see Occasion. Given under our Hands the Thirteenth Day of February 1799.

TO Mr. THOMAS BENSLEY,  
Printer,  
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W. MARSDEN.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**E do hereby, in pursuance of the Powers vested in us by Acts of Parliament, licence, authorise, and empower you to publish and vend, and to cause to be published and vended, all such Nautical Almanacs and Astronomical Ephemerides, and such other useful Tables, constructed under our Direction, as have hitherto been printed or shall hereafter be printed for the several Years next ensuing, down to the Year 1810 inclusive. For all which this shall be your sufficient Warrant; reserving to ourselves, nevertheless, and to our successors, Commissioners of the afore said Board, or to the major part of them, Power to revoke and annul the Appointment hereby made, by Writing signed by us, or them, whenever we or they shall see Occasion. Given under our Hands the Tenth Day of *August*, 1802.

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and  
John Mackinlay,  
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in the Strand.

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By Command of the Commissioners,

G. GILPIN, Secretary.

## P R E F A C E.

**T**HE Commissioners of Longitude, in Pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1804, being the Thirty-eighth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER, of *Göttingen*, to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculation; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on Account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published in the First Edition of the Tables requisite to be used with the EPHEMERIS, and since, with Improvements, in the Second Edition of the same Tables; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL, which are now also annexed to the Second Edition of the REQUISITE TABLES; but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the care of Dr. SHEPHERD, Plumian Professor of Astronomy and Experimental Philosophy at CAMBRIDGE, in 1772.

MAYER's last Manuscript Tables of the Sun and Moon, and his curious and elaborate Theory of the Moon, were received by the

Board of Longitude, after his decease, for which his Widow received a Reward of Three Thousand Pounds, by Act of Parliament, and the celebrated Mr. LEONARD EULER the Sum of Three Hundred Pounds for having furnished the Theorems made Use of by Mr. MAYER in his Theory. Both the Tables and Theory were printed under my Inspection, and published in 1770.

The Sun's Longitude, and every Thing relating thereto, has been always inserted in the NAUTICAL ALMANAC, as computed from these Tables, from its first Beginning in 1767 to the present Time. The Moon's Place in the Heavens was inserted as calculated directly from MAYER's TABLES, in the NAUTICAL ALMANAC, from 1767 to 1776 inclusive, or the first ten Years. But from the NAUTICAL ALMANAC of 1777 to that of 1788, both inclusive, or the next twelve Years, the Moon's Place was inserted, as calculated from new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude upon the Series of lunar Observations made by the late Dr. BRADLEY, and published in the NAUTICAL ALMANAC of 1774; in which new Tables the Epoch of the Moon's mean longitude is 1" less, that of the Apogee is 56" less, and that of the ascending Node 45" more than in MAYER's printed Tables, and the Equations are calculated to Tenths of a Second; and moreover one new Equation is introduced, whose Argument is the mean Distance of the Moon from the Sun's Apogee, and Maximum is 16", 4. These Tables compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seemed to give always the Moon's Longitude in the Heavens correctly within 45" of a Degree. But from the NAUTICAL ALMANAC of 1789 to that of 1796, both inclusive, the Moon's Place was inserted as calculated from new Tables still farther corrected by Mr. MASON, entitled by him TABLES of 1780, as having been completed about that Time, being rendered more exact than the former by the Addition of eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory as to the Arguments, but settled as to the Maxima, from the said Observations, and the Whole being calculated to Tenths of a Second. These last new Tables when compared with 177 of the above-mentioned Series of Observations, being all in the Whole Series in which certain Tables composed by Mr. MASON called Tables of 1778, but less exact than those of 1780, differed above 20" from the Observations, seemed, after making a proper Allowance for the unavoidable Error of Observation, to give always the Moon's Longitude in the Heavens correct within 30 Seconds of a Degree. At the same Time the Error of these Tables in Latitude seemed never to exceed a minute, which will but triflingly affect the computed Distances of the Moon from the Sun and zodiacal Stars set down in the EPHEMERIS. It may be proper, however, here to observe, that the 18th Equation of these Tables, whose Argument

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is the mean Longitude of the Moon's ascending Node, or the same with that of the last Equation, or that of the Equinoctial Points, has been omitted designedly in the Calculations of the EPHEMERIS, as it does not yet sufficiently appear that such an Equation should arise from the Theory of Gravity, and the Series of Dr. BRADLEY's Observations affords too short a Period to state a Point of such Delicacy as this Equation of not quite 8" from a semi-period only of its Variations.

I shall now offer some Remarks on Mr. MAYER's mean Motions of the Sun and Moon, those of the Moon being taken the same in Mr. MASON's Tables, and propose a small Correction of them, as well as of the Longitudes and Latitudes of the fixt Stars.

Mr. MAYER's Tables of the Sun having been settled from M. DE LA CAILLE's Observations and his own, made between the Years 1750 and 1760, may be supposed to give the Epochs of the mean Places of the Sun pretty exact for that Time. And Mr. MASON's Tables of 1780 having been settled from Dr. BRADLEY's Observations, made also between 1750 and 1760, may be supposed to give the Epochs of the mean Places of the Moon pretty exact for that time. But the Rates of the Sun's and Moon's mean Motions for whole Years or Centuries in the same Tables may require some Correction for the Reasons which I am now to adduce. MAYER, in the Construction of his Tables, assumed the Precession of the Equinoxes, or the annual Motions of the fixt Stars in Longitude, to be exactly  $50''.3$ , without paying any Regard to the Alteration of the Place of the Equinox arising from the Translation of the Plane of the Ecliptic by the Action of the Planets. Dr. BRADLEY, by comparing his own Observations of Declinations of Stars lying on both Sides of the Equinoctial Colure with the like Observations of TYCHO BRAHE, had found the Precession of the Equinoxes in Longitude to be exactly  $1^\circ$  in  $71\frac{1}{2}$  Years, or at the Rate of  $50''.35$  in a Year, which is evidently what arises from the Motion of the Plane of the Equator alone, being occasioned by the Actions of the Sun and Moon upon the spheroidal Figure of the Earth. But the Equinoctial Point is also altered, though in a far less Degree, by the continual Motion of the Plane of the Ecliptic, owing to the Action of the Planets, and goes forward  $0''.15$  in a Year from that Cause along the Ecliptic, which will diminish the Precession of the Equinoxes, or the apparent annual Motions of the fixt Stars, lying near the Plane of the Ecliptic, in Longitude as much, and reduce them from  $50''.35$  to  $50''.20$ , which is  $0''.10$  less than assumed in MAYER's Tables; for as to those which have any considerable Latitude, their Longitudes will be further affected by a secular Variation relative both to their Longitude and Latitude; as expressed in the 44th Table annexed to the 1st Volume of my Observations made at the Royal Observatory, being

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derived from the same Cause, the Motion of the Plane of the Ecliptic produced by the Action of the Planets, and its being performed upon an Axis not very remote from the Line of the Equinoxes. It is obvious that the same Cause will also affect the apparent Latitudes of the fixt Stars. Now MAYER having settled the mean Motions of the Sun and Moon from the Equinoxes, by Comparison of Observations made in his Time with those made by Astronomers in former Ages, and particularly by Mr. FLAMSTEAD 60 Years before him, assuming the annual Precession of the Equinoxes to be  $50''.3$  or  $0''.1$  too great, and MAYER's mean Motions of the Moon having been adopted in Mr. MASON's Tables, therefore the annual mean Motions of the Sun and Moon from the Equinox in MAYER's Tables, and the Moon's mean Motions in Mr. MASON's Tables are too great by  $0''.10$  in a Year, and must be diminished accordingly, or at the Rate of  $10''$  in a Hundred Years; agreeable to Schol. 3. Prob. 3. of the Explanation and Use of MAYER's Solar and Lunar Tables; where he insists that their mean Motions are rightly settled from Observations, or very nearly so, with respect to the fixed Stars; but if it should be thought proper to state the Precession of the Equinox slower or quicker than  $50''.3$  in a Year, the mean Motions of the Sun and Moon should be all made slower or quicker by the same Quantity.

Hence as the Observations by which Mr. MAYER settled the Epochs of his solar Tables, and by which Mr. MASON settled the Epochs of his lunar Tables of 1780, were made about the Year 1756 at a Medium, the Correction of  $0''.10$  in a Year, above directed to be made to the Moon's Motions, should be dated from that Period; or there should be subtracted at the Rate of  $1''$  in 10 Years from the Epochs after 1756, and be added at the same Rate to the Epochs before 1756, in Mr. MAYER's and Mr. MASON's Tables.

The Longitudes of the Stars of Dr. BRADLEY's Catalogue, inserted in the NAUTICAL ALMANAC of 1773, having been likewise settled from his Observations made about the Year 1756, and carried on to the Year 1760 by the annual Precession  $50''.35$ , should be first reduced back to the Beginning of 1756 by the same annual Precession  $50''.35$  which he used, and then carried forward to any future Period, or backward to any preceding one, by the true annual Precession of the Equinoxes  $50''.20$  for every Year following or preceding 1756, and further corrected by the Equation of the secular Motion derived from my 44th Table. The Latitudes of the fixt Stars contained in the same Catalogue should also be corrected by the secular Equation derived from my 45th Table, according to the Number of the Years before or after 1756.

In the Interval of 41 Years, which have elapsed since 1756, to the Year 1797, these Corrections having amounted to  $4''.1$  in the

# P R E F A C E.

Epochs of Longitude of the Sun and Moon, and to  $13''$  in the Longitude of some of the Stars from which the Moon's Distances are computed in the EPHEMERIS, and to  $20''$  in some of their Latitudes, it has been thought proper to allow for them: Therefore the Sun's Place in this EPHEMERIS and the succeeding ones will be found computed from MAYER's Tables, and the Moon's Place from Mr. MASON's Tables of 1780, both corrected in the Manner above-mentioned, and the Distances of the Moon from the Stars will be found computed from their Longitudes, carried on and corrected as above-mentioned; their Latitudes too should have been taken according to the Corrections above-mentioned, but the general Tables of Moon's Distances from the particular Stars having been made Use of as far as the EPHEMERIS of 1802 inclusive, in which the Latitudes of the Stars have been taken which belong to the Year 1780, those Corrections could not be applied; the Error resulting, however, will be very trifling. But in this EPHEMERIS of 1804 the Latitudes as well as Longitudes of the Stars are thoroughly corrected; and the Moon's Distances from them computed by the late Mr. TAYLOR's accurate Tables of Logarithmic Sines and Tangents to every Second of the Quadrant.

To illustrate these Corrections by Examples:—Let it be required to find the Sun's mean Longitude and that of his Apogee, by MAYER's Tables; and the Moon's mean Longitude, and mean Anomaly, and the mean Longitude of her Node; and the mean Longitude and Latitude of Fomalhaut, all to the Beginning of 1797. The Sun's mean Longitude will be  $9^{\circ} 10^{\circ} 37' 28''.6$ , and the Longitude of his Apogee  $3^{\circ} 9^{\circ} 29' 11''.9$ . The Moon's mean Longitude  $10^{\circ} 7^{\circ} 34' 30''.7$ , and with Acceleration  $10^{\circ} 7^{\circ} 34' 39''.2$ . Her mean Anomaly  $0^{\circ} 24^{\circ} 6' 53''$ , and with Acceleration  $0^{\circ} 24^{\circ} 7' 1''.5$ , and the Longitude of her Node,  $3^{\circ} 1^{\circ} 15' 1''.9$ . The Longitude of Fomalhaut,  $11^{\circ} 0^{\circ} 59' 58''.9$  and its Latitude,  $21^{\circ} 6' 35''.0$  South; its Variation of Longitude in 100 Years different from the mean Precession, at the Rate of  $50''.20$  in a Year, by Table 44 being  $+17''.3$  and its Variation of Latitude in the same Time by Table 45, being  $+17''.2$ .

The Calculations of the Planets Places have been made for this EPHEMERIS from M. DE LA LANDE's Tables contained in the Second Edition of his Astronomy, as they have been for every EPHEMERIS beginning with that of 1780; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN's Tables annexed to the same Tables of M. DE LA LANDE, excepting the Eclipses of Jupiter's Second Satellite, which are inserted in this EPHEMERIS for the Eighteenth Time from new Tables transmitted to me from their learned Author, the late Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at STOCKHOLM, and published at the End of the Nautical Almanac of 1779.



# P R E F A C E.

All the Articles of the EPHEMERIS were computed by two separate Persons, and examined by a third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which for Noon were computed by one Person, and for Midnight by another, and the Truth of these Calculations ascertained by Means of Differences, which for the Moon's Longitude were carried as far as the Fourth Order.

NEVIL MASKELYNE,

ASTRONOMER ROYAL.

GREENWICH,

Jan. 5, 1795.

## EXPLANATION OF THE CHARACTERS USED IN THE ASTRONOMICAL EPHEMERIS.

### *The P L A N E T S, &c.*

☉ The Sun.	♂ Mars.
☾ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Georgian.
⊙ The Earth.	

- ♊ The Moon's, or any other Planet's Ascending Node.
- ♋ The Descending Node.
- ♌ Conjunction, or Planets situated in the same Longitude.
- ☐ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.
- ♍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N. North.	Inf. Inferior.	Im. Immerfion.
S. South.	Sup. Superior.	Em. Emerfion.

### *S I G N S of the Z O D I A C.*

S.	S.
♈ Aries.	♎ Libra
♉ Taurus.	♏ Scorpio.
♊ Gemini.	♐ Sagittarius.
♋ Cancer.	♑ Capricornus.
♌ Leo.	♒ Aquarius.
♍ Virgo.	♓ Pisces.

# PRINCIPAL ARTICLES

OF

## THE ALMANAC OF 1804.

### *Chronological Cycles.*

### *Ember Days.*

Dominical Letters - - - AG	Feb. - - - 22, 24, and 25
Lunar Cycle, or Golden Numb. 19	May - - - 23, 25, and 26
Epact - - - - - 18	September - - 19, 21, and 22
Solar Cycle - - - - - 21	December - - - 19, 21, and 22
Roman Indiction - - - - 7	

### MOVEABLE FEASTS.

Septuagesima Sunday - Jan. 29	Low Sunday - - - - Apr. 8
Quinq. or Shrove Sunday Feb. 12	Rogation Sunday - - - May 6
Ash Wed. or 1st Day of Lent Feb. 15	Asc. Day, or Holy Thurs. May 10
Mid-Lent Sunday - - - Mar. 11	Whit Sunday - - - - May 20
Palm Sunday - - - - Mar. 25	Trinity Sunday - - - May 27
EASTER DAY - - - - Apr. 1	Advent Sunday - - - Dec. 2

### T E R M S.

Names	London.		Oxford.		Cambridge.	
	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent	Jan. 23	Feb. 12	Jan. 14	Mar. 24	{ Jan. 13 Div. Feb. 17 Noon. Mar. 23	
Easter	April 18	May 14	April 11	May 17	{ April 11 Div. May 24 Noon. July 6	
Trinity	June 1	June 20	May 30	July 14		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 17	{ Oct. 10 Div. Nov. 12 Midn. Dec. 16	

*Oxford Act July 9. — Camb. Commencement July 3.*

# O B L I Q U I T Y, &c.

Obliquity  
of the  
Ecliptic.

1804.

Equation of  
Equinoctial  
Points.

D. M. s.							s.
23. 27. 55, 8	-	-	-	-	Jan. 1.	+	12, 5
23. 27. 56, 0	-	-	-	-	Apr. 1.	+	13, 6
23. 27. 54, 4	-	-	-	-	July 1.	+	14, 6
23. 27. 54, 4	-	-	-	-	Oct. 1.	+	15, 4
23. 27. 52, 6	-	-	-	-	Dec. 31.	+	16, 1

## SOLAR and LUNAR ECLIPSES

IN THE YEAR 1804.

Jan. 26. *MOON eclipsed, visible at Greenwich.*

H. M.

Beginning	-	-	-	-	-	-	7. 57½
Ecliptic 8	-	-	-	-	-	-	8. 58½
Middle	-	-	-	-	-	-	9. 7
End	-	-	-	-	-	-	16. 16½

Digits eclipsed, 4°. 44', on D's South Limb.

Feb. 10 and 11. *SUN eclipsed, visible at Greenwich.*

D. H. M.

Beginning	-	-	-	-	-	10. 22. 27
Greatest Obscuration	-	-	-	-	-	10. 23. 38½
End	-	-	-	-	-	11. 0. 55

Digits eclipsed, 8°. 36', D makes first impression on  
☉'s Limb at 122° from ☉'s Vertex on the Right  
Hand.

July 22. *MOON eclipsed, invisible at Greenwich.*

H. M.

Beginning	-	-	-	-	-	3. 51½
Ecliptic 8	-	-	-	-	-	5. 2½
Middle	-	-	-	-	-	5. 30¾
End	-	-	-	-	-	7. 9½

Digits eclipsed 10° 52', on D's North Limb.

Aug. 5. *SUN eclipsed, invisible at Greenwich.*

☉ at 3<sup>h</sup>. 59', in Long. 4°. 12'. 55½, D's Lat. 44½ S.  
☉ will be centrally eclipsed on the Meridian at  
4<sup>h</sup>. 24'. in Long. 66°½ West, and Lat. 38° South.

Dec. 31. *SUN eclipsed, invisible at Greenwich.*

☉ at 12<sup>h</sup>. 51', in Long. 9°. 10'. 15½, D's Lat. 1°. 25½ S.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter	---- 4. 9. 51
			● New Moon	---- 12. 9. 3
			☽ First Quarter	--- 19. 9. 47
			○ Full Moon	--- 26. 8. 58
			Other Phenomena.	
			D. H. M.	
			8. 7. 48	☽ π m
			8. 17. 21	☽ σ m
			8. 21. 11	☽ α m
			9. 19. 12½	Im. of 43 Ophi. * 12' ½ N.
			9. 19. 49	Em. * 13' ½ N. of ☽'s C.
			13. - - -	☿ Stationary.
			16. - - -	♀ γ ♍, * 56' S.
			18. - - -	♂ λ ♏, * 45' S.
			18. - - -	♀ δ ♍, * 57' ½ S.
			19. 2. 14	☽ η ✕
			20. 16. 0	☾ enters ☿
			21. - - -	♄ Stationary.
			21. 10. 3	☽ η Pleiadum.
			22. - - -	♀ ι ♏, * 29' S.
			23. 0. 28	☽ β ♏
			24. 6. 24	☽ ε ♏
			25. 6. 27	☽ ζ ♏
			26. - - -	☽ eclipsed, visible.
			26. 9. 19	☽ δ ♏
			27. 19. 28	☽ ν ♏
			29. - - -	♄ Stationary.
Sun.	1	Circumcision.		
M.	2			
Tu.	3			
W.	4			
Th.	5			
F.	6	Epiphany.		
Sa.	7	Prs. Charl. of W. b.		
Sun.	8	1st Sun. after Ep. Lucian.		
M.	9			
Tu.	10			
W.	11			
Th.	12			
F.	13	Hilary. Camb. T. beg.		
Sa.	14	Oxf. Term begins.		
Sun.	15	2d Sun. after Epiphany.		
M.	16			
Tu.	17			
W.	18	Q. Charl. birth-day kept.		
Th.	19			
F.	20	Fab. In 8d. of St. H. 1 ret.		
Sa.	21	Agnes.		
Sun.	22	3d Sun. after Ep. Vincent		
M.	23	Hilary Term begins.		
Tu.	24			
W.	25	Conversion of St. Paul.		
Th.	26			
F.	27	D. of Suffex b. From St.		
Sa.	28	[Hil. in 15 days 2 ret.		
Sun.	29	Septuagesima-Sunday.		
M.	30	K. Charles I. Martyr.		
Tu.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	9. 9. 57. 19	18. 43. 19. 8	23. 5. 30	3. 33. 0	28. 4
M.	2	9. 10. 58. 29	18. 47. 44. 9	23. 0. 41	4. 1. 4	28. 2
Tu.	3	9. 11. 59. 40	18. 52. 9. 7	22. 55. 25	4. 29. 6	27. 8
W.	4	9. 13. 0. 50	18. 56. 34. 1	22. 49. 42	4. 57. 4	27. 4
Th.	5	9. 14. 2. 1	19. 0. 58. 2	22. 43. 31	5. 24. 8	27. 1
F.	6	9. 15. 3. 12	19. 5. 21. 8	22. 36. 53	5. 51. 9	26. 6
Sa.	7	9. 16. 4. 24	19. 9. 45. 1	22. 29. 48	6. 18. 5	26. 1
Sun.	8	9. 17. 5. 35	19. 14. 7. 8	22. 22. 17	6. 44. 6	25. 7
M.	9	9. 18. 6. 46	19. 18. 30. 1	22. 14. 19	7. 10. 3	25. 2
Tu.	10	9. 19. 7. 57	19. 22. 51. 9	22. 5. 55	7. 35. 5	24. 6
W.	11	9. 20. 9. 8	19. 27. 13. 1	21. 57. 5	8. 0. 1	24. 0
Th.	12	9. 21. 10. 18	19. 31. 33. 8	21. 47. 49	8. 24. 1	23. 4
F.	13	9. 22. 11. 29	19. 35. 53. 8	21. 38. 8	8. 47. 5	22. 8
Sa.	14	9. 23. 12. 38	19. 40. 13. 2	21. 28. 2	9. 10. 3	22. 1
Sun.	15	9. 24. 13. 47	19. 44. 32. 0	21. 17. 31	9. 32. 4	21. 5
M.	16	9. 25. 14. 55	19. 48. 50. 1	21. 6. 35	9. 53. 9	20. 7
Tu.	17	9. 26. 16. 2	19. 53. 7. 4	20. 55. 15	10. 14. 6	20. 0
W.	18	9. 27. 17. 8	19. 57. 24. 0	20. 43. 32	10. 34. 6	19. 3
Th.	19	9. 28. 18. 14	20. 1. 39. 9	20. 31. 25	10. 53. 9	18. 6
F.	20	9. 29. 19. 18	20. 5. 55. 1	20. 18. 54	11. 12. 5	17. 7
Sa.	21	10. 0. 20. 20	20. 10. 9. 4	20. 6. 1	11. 30. 2	17. 0
Sun.	22	10. 1. 21. 22	20. 14. 23. 0	19. 52. 46	11. 47. 2	16. 1
M.	23	10. 2. 22. 23	20. 18. 35. 7	19. 39. 8	12. 3. 3	15. 4
Tu.	24	10. 3. 23. 23	20. 22. 47. 7	19. 25. 8	12. 18. 7	14. 6
W.	25	10. 4. 24. 21	20. 26. 58. 9	19. 10. 48	12. 33. 3	13. 7
Th.	26	10. 5. 25. 18	20. 31. 9. 2	18. 56. 6	12. 47. 0	13. 0
F.	27	10. 6. 26. 15	20. 35. 18. 8	18. 41. 3	13. 0. 0	12. 1
Sa.	28	10. 7. 27. 10	20. 39. 27. 5	18. 25. 40	13. 12. 1	11. 3
Sun.	29	10. 8. 28. 5	20. 43. 35. 4	18. 9. 58	13. 23. 4	10. 6
M.	30	10. 9. 28. 58	20. 47. 42. 5	17. 53. 55	13. 34. 0	9. 7
Tu.	31	10. 10. 29. 51	20. 51. 48. 8	17. 37. 34	13. 43. 7	

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Dittance.	S. D. M.
1	1. 11, 0	16. 19, 3	2. 32, 9	9. 992635	10. 15. 54
7	1. 10, 7	16. 19, 2	2. 32, 9	9. 992698	10. 15. 35
13	1. 10, 2	16. 18, 9	2. 32, 7	9. 992831	10. 15. 16
19	1. 9, 7	16. 18, 4	2. 32, 7	9. 993020	10. 14. 57
25	1. 9, 0	16. 17, 8	2. 32, 4	9. 993286	10. 14. 38

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersions.</i>		<i>Immersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 1	17. 50. 30	4	4. 59. 4	7	9. 31. 10 Im.
3	12. 18. 1	* 7	18. 14. 0	7	11. 38. 12 E.
5	6. 45. 34	11	7. 29. 3	14	13. 26. 2 Im.
7	1. 13. 8	14	20. 44. 9	* 14	15. 32. 19 E.
8	19. 40. 44	18	9. 59. 22	* 21	17. 21. 21 Im.
10	14. 8. 22	21	23. 14. 42	21	19. 26. 58 E.
12	8. 35. 57	25	12. 30. 13	28	21. 17. 21 Im.
14	3. 3. 42	29	1. 45. 54	28	23. 22. 19 E.
15	21. 31. 21				
* 17	15. 59. 7			IV. Satellite. Conj.	
19	10. 26. 53				
21	4. 54. 44				
22	23. 22. 35				
* 24	17. 50. 29			7	19. 28 Inf.
26	12. 18. 26			16	4. 55 Sup.
28	6. 46. 27			* 24	13. 48½ Inf.
30	1. 14. 29				
31	19. 42. 35				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S.D.M.	D.M.	S.D.M.	D.M.		D.M.	H.M.
♿ Gr. Elong. 22 <sup>d</sup> . MERCURY.							
1	10. 6.43	6.55 S	9.17.54	2. 8 S	24.23 S		0.36
4	10.17. 9	7. 0	9.22.49	2. 8	23.38		0.44
7	10.28.24	6.50	9.27.45	2. 4	22.39		0.51
10	11.10.38	6.22	10. 2.40	1.55	21.27		0.59
13	11.24. 1	5.32	10. 7.29	1.39	20. 2		1. 6
16	0. 8.41	4.16	10.12. 5	1.17	18.26		1.11
19	0.24.42	2.33	10.16.19	0.48	16.43		1.14
22	1.12. 1	0.29 S	10.19.54	0.10 S	15. 1		1.15
25	2. 0.23	1.45 N	10.22.31	0.36 N	13.27		1.12
28	2.19.16	3.51	10.23.48	1.27	12.14		1. 3
31	3. 8. 5	5.32	10.23.28	2.19	11.31		0.48
♀ VENUS.							
1	10.25.39	3.12 S	9.29.12	1.28 S	21.47 S		1.23
7	11. 5.10	3.20	10. 6.42	1.33	20. 8		1.28
13	11.14.41	3.23	10.14.11	1.36	18. 7		1.33
19	11.24.12	3.21	10.21.40	1.36	15.49		1.37
25	0. 3.45	3.12	10.29. 8	1.34	13.15		1.40
♂ MARS.							
1	8.28.58	1.12 S	9. 3.24	0.43 S	24. 9 S		23.31
7	9. 2.27	1.17	9. 7.58	0.46	24. 0		23.25
13	9. 5.57	1.22	9.12.32	0.49	23.42		23.19
19	9. 9.29	1.27	9.17. 9	0.52	23.14		23.13
25	9.13. 4	1.31	9.21.46	0.55	22.36		23. 7
♃ JUPITER. ☐ 25 <sup>d</sup> . 10 <sup>h</sup> 3 <sup>m</sup> .							
1	6.22.36	1.17 N	7. 2.13	1.13 N	11. 7 S		19.15
7	6.23. 3	1.17	7. 3. 0	1.14	11.22		18.52
13	6.23.30	1.17	7. 3.42	1.15	11.35		18.29
19	6.23.57	1.17	7. 4.19	1.16	11.46		18. 5
25	6.24.25	1.16	7. 4.50	1.18	11.56		17.42
♄ SATURN.							
1	5.27.31	2.17 N	6. 3.27	2.19 N	0.45 N		17.30
7	5.27.44	2.17	6. 3.33	2.21	0.45		17. 4
13	5.27.56	2.17	6. 3.35	2.23	0.45		16.38
19	5.28. 8	2.18	6. 3.33	2.24	0.48		16.12
25	5.28.20	2.18	6. 3.27	2.26	0.52		15.47
♅ GEORGIAN. ☐ 7 <sup>d</sup> . 13 <sup>h</sup> 4 <sup>m</sup> .							
1	6.13.28	0.40 N	6.16.32	0.40 N	5.54 S		18.15
11	6.13.36	0.40	6.16.41	0.40	5.57		17.32
21	6.13.43	0.40	6.16.44	0.40	5.58		16.51

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	5. 1. 55. 5	5. 8. 10. 51	1. 34. 3 S	2. 6. 4 S
M.	2	5. 14. 22. 7	5. 20. 29. 22	2. 36. 14	3. 4. 16
Tu.	3	5. 26. 33. 9	6. 2. 34. 5	3. 29. 57	3. 53. 9
W.	4	6. 8. 32. 47	6. 14. 29. 52	4. 13. 37	4. 31. 16
Th.	5	6. 20. 25. 57	6. 26. 21. 41	4. 45. 57	4. 57. 34
F.	6	7. 2. 17. 40	7. 8. 14. 27	5. 5. 59	5. 11. 10
Sa.	7	7. 14. 12. 38	7. 20. 12. 42	5. 13. 0	5. 11. 27
Sun.	8	7. 26. 15. 7	8. 2. 20. 19	5. 6. 24	4. 57. 53
M.	9	8. 8. 28. 39	8. 14. 40. 23	4. 45. 54	4. 30. 27
Tu.	10	8. 20. 55. 45	8. 27. 14. 58	4. 11. 37	3. 49. 31
W.	11	9. 3. 38. 5	9. 10. 5. 7	3. 24. 18	2. 56. 13
Th.	12	9. 16. 36. 4	9. 23. 10. 48	2. 25. 32	1. 52. 36
F.	13	9. 29. 49. 13	10. 6. 31. 8	1. 17. 47	0. 41. 34 S
Sa.	14	10. 13. 16. 20	10. 20. 4. 36	0. 4. 27 S	0. 33. 3 N
Sun.	15	10. 26. 55. 41	11. 3. 49. 19	1. 10. 21 N	1. 46. 52
M.	16	11. 10. 45. 17	11. 17. 43. 18	2. 22. 1	2. 55. 15
Tu.	17	11. 24. 43. 8	0. 1. 44. 33	3. 26. 0	3. 53. 47
W.	18	0. 8. 47. 21	0. 15. 51. 16	4. 18. 6	4. 38. 34
Th.	19	0. 22. 56. 5	0. 1. 36	4. 54. 51	5. 6. 40
F.	20	1. 7. 7. 29	1. 14. 13. 33	5. 13. 47	5. 16. 9
Sa.	21	1. 21. 19. 26	1. 28. 24. 49	5. 13. 40	5. 6. 26
Sun.	22	2. 5. 29. 22	2. 12. 32. 41	4. 54. 32	4. 38. 13
M.	23	2. 19. 34. 23	2. 26. 34. 4	4. 17. 46	3. 53. 32
Tu.	24	3. 3. 31. 19	3. 10. 25. 45	3. 25. 58	2. 55. 34
W.	25	3. 17. 17. 1	3. 24. 4. 45	2. 22. 50	1. 48. 20
Th.	26	4. 0. 48. 41	4. 7. 28. 34	1. 12. 37 N	0. 36. 14 N
F.	27	4. 14. 4. 16	4. 20. 35. 38	0. 0. 16 S	0. 36. 22 S
Sa.	28	4. 27. 2. 40	5. 3. 25. 26	1. 11. 37	1. 45. 34
Sun.	29	5. 9. 43. 59	5. 15. 58. 34	2. 17. 51	2. 48. 9
M.	30	5. 22. 9. 23	5. 28. 16. 46	3. 16. 8	3. 41. 37
Tu.	31	6. 4. 21. 5	6. 10. 22. 45	4. 4. 24	4. 24. 17



		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	20	15. 57	153. 21	159. 3	9. 20 N	6. 34 N
M.	2	21	16. 38	164. 36	170. 3	3. 45 N	0. 57 N
Tu.	3	22	17. 17	175. 27	180. 48	1. 50 S	4. 35 S
W.	4	23	17. 57	186. 10	191. 34	7. 17	9. 53
Th.	5	24	18. 39	197. 2	202. 35	12. 24	14. 48
F.	6	25	19. 23	208. 16	214. 6	17. 4	19. 10
Sa.	7	26	20. 9	220. 5	226. 15	21. 6	22. 49
Sun.	8	27	20. 59	232. 37	239. 10	24. 18	25. 31
M.	9	28	21. 52	245. 54	252. 47	26. 27	27. 4
Tu.	10	29	22. 46	259. 48	266. 55	27. 20	27. 16
W.	11	30	23. 41	274. 4	281. 13	26. 49	26. 1
Th.	12	1	6	288. 20	295. 22	24. 50	23. 19
F.	13	2	0. 34	302. 18	309. 6	21. 29	19. 20
Sa.	14	3	1. 25	315. 46	322. 19	16. 56	14. 17
Sun.	15	4	2. 15	328. 44	335. 4	11. 27	8. 27
M.	16	5	3. 2	341. 20.	347. 34	5. 21 S	2. 10 S
Tu.	17	6	3. 49	353. 47	0. 3	1. 3 N	4. 16 N
W.	18	7	4. 37	6. 22	12. 47	7. 27	10. 32
Th.	19	8	5. 27	19. 20	26. 4	13. 29	16. 16
F.	20	9	6. 20	32. 58	40. 5	18. 50	21. 9
Sa.	21	10	7. 17	47. 24	54. 55	23. 9	24. 48
Sun.	22	11	8. 16	62. 36	70. 24	26. 4	26. 55
M.	23	12	9. 17	78. 17	86. 9	27. 29	27. 19
Tu.	24	13	10. 17	93. 56	101. 36	26. 51	25. 58
W.	25	14	11. 13	109. 4	116. 19	24. 42	23. 6
Th.	26	15	12. 6	123. 19	130. 3	21. 11	19. 0
F.	27	16	12. 55	136. 33	142. 48	16. 37	14. 4
Sa.	28	17	13. 40	148. 50	154. 42	11. 23	8. 37
Sun.	29	18	14. 22	160. 25	166. 0	5. 48	2. 57 N
M.	30	19	15. 3	171. 30	176. 57	0. 7 N	2. 42 S
Tu.	31	20	15. 43	182. 22	187. 47	5. 28 S	9. 10

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sun.	1	15. 17	15. 12	56. 6	55. 47	5063	5087
M.	2	15. 7	15. 2	55. 28	55. 11	5112	5134
Tu.	3	14. 58	14. 55	54. 56	54. 44	5154	5170
W.	4	14. 52	14. 50	54. 34	54. 27	5183	5193
Th.	5	14. 49	14. 49	54. 22	54. 21	5199	5201
F.	6	14. 49	14. 50	54. 22	54. 26	5199	5194
Sa.	7	14. 51	14. 54	54. 31	54. 39	5187	5177
Sun.	8	14. 56	15. 0	54. 49	55. 2	5163	5146
M.	9	15. 3	15. 8	55. 15	55. 31	5129	5108
Tu.	10	15. 14	15. 17	55. 47	56. 4	5087	5065
W.	11	15. 22	15. 26	56. 22	56. 40	5042	5019
Th.	12	15. 31	15. 36	56. 57	57. 15	4998	4975
F.	13	15. 41	15. 45	57. 32	57. 48	4953	4933
Sa.	14	15. 49	15. 53	58. 3	58. 17	4915	4897
Sun.	15	15. 56	15. 59	58. 29	58. 40	4882	4869
M.	16	16. 2	16. 4	58. 50	58. 58	4856	4846
Tu.	17	16. 6	16. 8	59. 5	59. 11	4838	4831
W.	18	16. 9	16. 10	59. 16	59. 19	4824	4821
Th.	19	16. 10	16. 11	59. 21	59. 23	4819	4816
F.	20	16. 11	16. 11	59. 23	59. 22	4816	4817
Sa.	21	16. 10	16. 9	59. 20	59. 17	4820	4823
Sun.	22	16. 8	16. 6	59. 12	59. 6	4830	4837
M.	23	16. 4	16. 2	58. 58	58. 49	4846	4858
Tu.	24	15. 59	15. 55	58. 38	58. 26	4871	4886
W.	25	15. 51	15. 47	58. 11	57. 56	4905	4923
Th.	26	15. 43	15. 38	57. 39	57. 22	4945	4966
F.	27	15. 33	15. 28	57. 4	56. 45	4989	5013
Sa.	28	15. 23	15. 18	56. 27	56. 10	5036	5058
Sun.	29	15. 13	15. 9	55. 52	55. 35	5081	5103
M.	30	15. 4	15. 0	55. 19	55. 4	5124	5144
Tu.	31	14. 57	14. 54	54. 52	54. 41	5159	5174

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica $\eta$	1	49.	10. 5	47.	35. 34	46.	1. 23	44.	27. 32	42.	53. 59	41.	20. 45	39.	47. 49	38.	15. 12
	2	36.	42. 52	35.	10. 49	33.	39. 4	32.	7. 35	30.	36. 23	29.	5. 27	27.	34. 48	26.	4. 24
	3	24.	34. 16														
Antares.	3	70.	16. 50	68.	46. 20	67.	16. 1	65.	45. 53	64.	15. 55	62.	46. 7	61.	16. 27	59.	46. 55
	4	58.	17. 32	56.	48. 16	55.	19. 6	53.	50. 2	52.	21. 4						
The Sun.	1	-	-	-	-	-	-	-	-	122.	15. 35	120.	49. 55	119.	24. 32	117.	59. 25
	2	116.	34. 35	115.	10. 1	113.	45. 42	112.	21. 37	110.	57. 48	109.	34. 13	108.	10. 51	106.	47. 42
	3	105.	24. 45	104.	2. 0	102.	39. 25	101.	17. 1	99.	54. 47	98.	32. 43	97.	10. 47	95.	48. 59
	4	94.	27. 19	93.	5. 47	91.	44. 20	90.	23. 0	89.	1. 45	87.	40. 35	86.	19. 28	84.	58. 24
	5	83.	37. 24	82.	16. 26	80.	55. 29	79.	34. 33	78.	13. 38	76.	52. 42	75.	31. 44	74.	10. 45
	6	72.	49. 45	71.	28. 43	70.	7. 37	68.	46. 27	67.	25. 14	66.	3. 55	64.	42. 31	63.	21. 0
	7	61.	59. 23	60.	37. 39	59.	15. 47	57.	53. 47	56.	31. 39	55.	9. 22	53.	46. 56	52.	24. 20
	8	51.	1. 34	49.	38. 37	48.	15. 28	46.	52. 8	45.	28. 36	44.	4. 52	42.	40. 56	41.	16. 47
	9	39.	52. 25														
$\alpha$ Arietis.	14	81.	47. 34	80.	5. 43	78.	23. 40	76.	41. 27	74.	59. 4	73.	16. 31	71.	33. 48	69.	50. 57
	15	68.	7. 56	66.	24. 47	64.	41. 31	62.	58. 7	61.	14. 36	59.	30. 57	57.	47. 13	56.	3. 22
	16	54.	19. 26	52.	35. 25	50.	51. 20	49.	7. 11	47.	22. 58	45.	38. 42	43.	54. 24	42.	10. 4
	17	40.	25. 42														

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Aldebaran.	17	72.47.52		71. 4.30		69.21. 6		67.37.40		65.54.13		64.10.46		62.27.20		60.43.55	
	18	59. 0.32		57.17.11		55.33.54		53.50.41		52. 7.33		50.24.30		48.41.35		46.58.49	
	19	45.16.12		43.33.43		41.51.29		40. 9.32		38.27.50		36.46.30		35. 5.33		33.25. 1	
	20	31.44.56															
Pollux.	20	72.57.28		71.11.45		69.26. 3		67.40.22		65.54.42		64. 9. 3		62.23.20		60.37.51	
	21	58.52.18		57. 6.47		55.21.20		53.35.55		51.50.34		50. 5.17		48.20. 4		46.34.55	
	22	44.49.52															
	22	81.37. 8		79.51.32		78. 6. 0		76.20.32		74.35. 9		72.49.50		71. 4.37		69.19.29	
Regulus.	23	67.34.26		65.49.29		64. 4.39		62.19.56		60.35.20		58.50.51		57. 6.31		55.22.19	
	24	53.38.16		51.54.22		50.10.38		48.27. 4		46.43.40		45. 0.26		43.17.21		41.34.33	
	25	39.51.54		38. 9.28		36.27.14		34.45.15		33. 3.28		31.21.56		29.40.38		27.59.35	
	26	26.18.48															
Spica $\eta$	26	80.21.15		78.40.38		77. 0.16		75.20. 9		73.40.17		72. 0.41		70.21.21		68.42.16	
	27	67. 3.28		65.24.56		63.46.42		62. 8.43		60.31. 2		58.53.38		57.16.30		55.39.40	
	28	54. 3. 7		52.26.51		50.50.52		49.15.10		47.39.46		46. 4.39		44.29.49		42.55.17	
	29	41.21. 1		39.47. 2		38.13.20		36.39.55		35. 6.47		33.33.56		32. 1.22		30.29. 4	
Antares.	30	28.57. 4															
	30	74.40.41		73. 8.27		71.36.26		70. 4.40		68.33. 6		67. 1.45		65.30.37		63.59.40	
	31	62.28.55		60.58.21		59.27.58		57.57.45		56.27.42		54.57.49		53.28. 3		51.58.26	
	F.1	50.28.57															
The Sun.	31	- - -		- - -		- - -		- - -		120.31.31		119. 9.13		117.47. 2		116.25. 0	
	F.1	115. 3. 6															

# *DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Norm.		III <sup>a</sup> .		VI <sup>b</sup> .		IX <sup>a</sup> .		Midnight.		XV <sup>b</sup> .		XVIII <sup>b</sup> .		XXI <sup>a</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Pollux.	1	42.	7.25	43.	41.29	45.	15.16	46.	48.46	48.	22.0	49.	54.57	51.	27.39	53.	0.5
	2	54.	32.16	56.	4.11	57.	35.51	59.	7.18	60.	38.30	62.	9.29	63.	40.15	65.	10.49
	3	66.	41.11														
Regulus.	3	29.	41.10	31.	11.32	32.	41.43	34.	11.44	35.	41.36	37.	11.18	38.	40.53	40.	10.19
	4	41.	39.38	43.	8.50	44.	37.55	46.	6.56	47.	35.50	49.	4.40	50.	33.26	52.	2.9
	5	53.	30.49	54.	59.27	56.	28.4	57.	56.41	59.	25.16	60.	53.52	62.	22.29	63.	51.8
	6	65.	19.48	66.	48.31	68.	17.17	69.	46.7	71.	15.1	72.	44.0	74.	13.5	75.	42.17
	7	77.	11.35														
Spica ♀	7	23.	16.3	24.	44.53	26.	13.54	27.	43.6	29.	12.29	30.	42.4	32.	11.51	33.	41.49
	8	35.	12.0	36.	42.23	38.	12.58	39.	43.46	41.	14.47	42.	46.1	44.	17.29	45.	49.11
	9	47.	21.6	48.	53.16	50.	25.40	51.	58.19	53.	31.13	55.	4.22	56.	37.46	58.	11.26
	10	59.	45.21	61.	19.32	62.	54.0	64.	28.43	66.	3.43	67.	38.59	69.	14.31	70.	50.19
The Sun.	11	72.	26.24														
	15									39.	7.1	40.	43.23	42.	19.53	43.	56.30
	16	45.	33.15	47.	10.7	48.	47.5	50.	24.9	52.	1.19	53.	38.35	55.	15.56	56.	53.22
	17	58.	30.53	60.	8.29	61.	46.9	63.	23.53	65.	1.41	66.	39.33	68.	17.28	69.	55.26
	18	71.	33.27	73.	11.31	74.	49.38	76.	27.47	78.	5.58	79.	44.11	81.	22.26	83.	0.43
	19	84.	39.2	86.	17.23	87.	55.45	89.	34.9	91.	12.33	92.	50.57	94.	29.22	96.	7.47
	20	97.	46.13	99.	24.40	101.	3.7	102.	41.33	104.	20.0	105.	58.26	107.	36.50	109.	15.14
	21	110.	53.20	112.	31.52	114.	10.17	115.	48.25	117.	26.51	119.	5.4	120.	43.15		

Stars Names.	Days	Nov.	III.	VI.	IX.	Midnight.	XV.	XVII.	XXI.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	19	- - -	- - -	- - -	- - -	40.48.42	42.24.57	44. 1.47	45.39. 9
	20	47.17. 0	48.55.19	50.34. 0	52.13. 3	53.52.28	55.32. 7	57.12. 0	58.52. 8
	21	60.32.26	62.12.55	63.53.32	65.34.16	67.15. 5			
α Arctis.	21	- - -	- - -	- - -	- - -	23.46.35	25.30.22	27.14.18	28.58.23
	22	30.42.35	32.26.53	34.11.14	35.55.38	37.40. 5	39.24.30	41. 8.54	42.53.16
	23	44.37.37	46.21.54	48. 6. 6	49.50.14	51.34.18	53.18.16	55. 2. 7	56.45.51
	24	58.29.28							
Aldebaran.	24	27.53.42	29.30.15	31. 7.17	32.44.45	34.22.35	36. 0.45	37.39. 7	39.17.41
	25	40.56.26	42.35.11	44.13.57	45.52.44	47.31.32	49.10.15	50.48.53	52.27.25
	26	54. 5.52	55.44.10	57.22.18	59. 0.17	60.38. 7	62.15.45	63.53.12	65.30.26
	27	67. 7.28	68.44.17	70.20.51	71.57.12	73.33.17			
Pollux.	27	- - -	- - -	- - -	- - -	30.52.14	32.28.42	34. 4.57	35.41. 1
	28	37.16.53	38.52.32	40.27.58	42. 3.10	43.38. 8	45.12.51	46.47.20	48.21.34
	29	49.55.24	51.29.19	53. 2.51	54.36. 7	56. 9. 9			
Regulus.	29	- - -	- - -	- - -	- - -	19. 7.57	20.40.50	22.13.30	23.45.57
	30	25.18.11	26.50.13	28.22. 2	29.53.40	31.25. 5	32.56.18	34.27.19	35.58. 9
	31	37.28.48	38.59.16	40.29.34	41.59.42	43.29.40	44.59.29	46.29.10	47.58.43
	F. 1	49.28. 8							

CONFIGURATIONS of the SATELLITES of JUPITER  
at VI o'Clock in the *Morning*.

1	2 ●			1.	1.	○		
2	1 ●	4.		3.	2.	○		
3		4.		3.		○	1.	○
4		4.			3.	1.	○	2.
5		+			2.	○	1.	3.
6			4.		2.	1.	○	3.
7				4.		○	1.	2.
8	4 ○				1.	3.	○	2.
9			3.	2.		○	1.	4.
10			3.			1.	○	2.
11				3.		1.	○	2.
12				2.		○	1.	3.
13				2.	1.	○		3.
14						○	1.	2.
15					1.	○	1.	2.
16				3.	2.	○	1.	4.
17	2. ○		3.		4.	1.	○	
18	1 ●		4.		3.		○	2.
19		4.			2.	○	1.	3.
20		4.		2.		1.	○	3.
21		4.				○	1.	2.
22	3 ●	4.			1.	○	2.	
23		4.		2	○	3	○	1.
24			3.		4.	1.	2.	○
25	1 ●			3.		○	4.	2.
26	1. ○				2.	○	3.	4.
27				2.		1.	○	3.
28						○	1.	2.
29					1.	○	3.	2.
30				2	○	3	○	1.
31			3.			1	○	2

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter - - -	3. 7. 28
			● New Moon - - - -	16. 23. 9
			☽ First Quarter - - -	17. 17. 22
			○ Full Moon - - - -	25. 0. 40
			Other Phenomena.	
W.	1		D. H. M	
Th.	2	<i>Purif. of B. V. Mary.</i>	4. 16. 16	☽ π m
F.	3	<i>Blas. on mor. of Pur. 3 ret.</i>	5. 1. 55	☽ σ m
Sa.	4		5. 5. 47	☽ α m
Sun.	5	<i>Sexagesima Sun. Agatha.</i>	5. 9. 8	☽ τ m
M.	6		6. 5. 10	☽ 43 Ophiuchi.
Tu.	7		6. - -	♀ φ ♀, * 17' 1/2 N.
W.	8		7. 16. 13	☽ φ †
Th.	9	<i>In 8 days of Pur. 4 ret.</i>	7. 20. 20	☽ σ †
F.	10		10. - -	☉ eclipsed, visible.
Sa.	11		15. 7. 41	☽ * ♄
Sun.	12	<i>Quinquagesima Sunday.</i>	17. 15. 23	☽ η Pleiadum.
M.	13	<i>Hilary Term ends.</i>	19. - -	♄ Stationary.
Tu.	14	<i>Valentine.</i>	19. 6. 15	☽ β ♄
W.	15	<i>Ash-Wednesday.</i>	19. 6. 46	☉ enters ♄
Th.	16		20. 12. 47	☽ ε ♀
F.	17	<i>Camb. Term div. n.</i>	21. - -	♄ Stationary.
Sa.	18		21. 13. 23	☽ * ♀
Sun.	19	<i>1st Sunday in Lent.</i>	22. 17. 15 1/2	I. ♄ * 13' 1/2 N. of ♄'s C.
M.	20		22. 17. 35 1/2	E. ♄ * 15' N.
Tu.	21		24. 3. 29	☽ γ ♄
W.	22			
Th.	23			
F.	24	<i>St. Matthias. Duke of</i>		
Sa.	25	<i>[Camb. b.]</i>		
Sun.	26	<i>2d Sunday in Lent.</i>		
M.	27			
Tu.	28			
W.	29			



Days of the Week.	Days of the Month.	THE S U N 's			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	10. 11. 30. 43	20. 55. 54. 3	17. 20. 53	13. 52. 6	8, 1
Th.	2	10. 12. 31. 34	20. 59. 59. 0	17. 3. 55	14. 0. 7	7, 3
F.	3	10. 13. 32. 24	21. 4. 2. 9	16. 46. 38	14. 8. 0	6, 5
Sa.	4	10. 14. 33. 13	21. 8. 5. 9	16. 29. 4	14. 14. 5	5, 7
Sun.	5	10. 15. 34. 1	21. 12. 8. 2	16. 11. 12	14. 20. 2	4, 9
M.	6	10. 16. 34. 49	21. 16. 9. 7	15. 53. 4	14. 25. 1	4, 1
Tu.	7	10. 17. 35. 35	21. 20. 10. 4	15. 34. 39	14. 29. 2	3, 4
W.	8	10. 18. 36. 20	21. 24. 10. 3	15. 15. 58	14. 32. 6	2, 5
Th.	9	10. 19. 37. 4	21. 28. 9. 4	14. 57. 2	14. 35. 1	1, 7
F.	10	10. 20. 37. 47	21. 32. 7. 7	14. 37. 51	14. 36. 8	1, 0
Sa.	11	10. 21. 38. 29	21. 36. 5. 2	14. 18. 25	14. 37. 8	0, 2
Sun.	12	10. 22. 39. 9	21. 40. 1. 9	13. 58. 44	14. 38. 0	0, 7
M.	13	10. 23. 39. 47	21. 43. 57. 9	13. 38. 50	14. 37. 3	1, 3
Tu.	14	10. 24. 40. 24	21. 47. 53. 0	13. 18. 43	14. 36. 0	2, 2
W.	15	10. 25. 40. 59	21. 51. 47. 4	12. 58. 23	14. 33. 8	2, 9
Th.	16	10. 26. 41. 32	21. 55. 41. 1	12. 37. 50	14. 30. 9	3, 6
F.	17	10. 27. 42. 3	21. 59. 34. 0	12. 17. 6	14. 27. 3	4, 4
Sa.	18	10. 28. 42. 32	22. 3. 26. 1	11. 56. 10	14. 22. 9	5, 2
Sun.	19	10. 29. 42. 59	22. 7. 17. 5	11. 35. 2	14. 17. 7	5, 8
M.	20	11. 0. 43. 24	22. 11. 8. 2	11. 13. 44	14. 11. 9	6, 5
Tu.	21	11. 1. 43. 47	22. 14. 58. 3	10. 52. 16	14. 5. 4	7, 2
W.	22	11. 2. 44. 8	22. 18. 47. 6	10. 30. 37	13. 58. 2	7, 9
Th.	23	11. 3. 44. 27	22. 22. 36. 3	10. 8. 49	13. 50. 3	8, 5
F.	24	11. 4. 44. 44	22. 26. 24. 3	9. 46. 52	13. 41. 8	9, 1
Sa.	25	11. 5. 45. 0	22. 30. 11. 7	9. 24. 46	13. 32. 7	9, 7
Sun.	26	11. 6. 45. 14	22. 33. 58. 5	9. 2. 32	13. 23. 0	10, 3
M.	27	11. 7. 45. 25	22. 37. 44. 8	8. 40. 10	13. 12. 7	10, 8
Tu.	28	11. 8. 45. 36	22. 41. 30. 5	8. 17. 40	13. 1. 9	11, 4
W.	29	11. 9. 45. 44	22. 45. 15. 6	7. 55. 2	12. 50. 5	

Days	Time of $\odot$ 's Semidiam. pass <sup>t</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 2	16. 16, 8	2. 32, 2	9.993716	10. 14. 15
7	1. 7, 5	16. 15, 8	2. 31, 9	9.994173	10. 13. 56
13	1. 6, 9	16. 14, 7	2. 31, 5	9.994674	10. 13. 37
19	1. 6, 2	16. 13, 4	2. 31, 1	9.995213	10. 13. 18
25	1. 5, 7	16. 12, 1	2. 30, 6	9.995806	10. 12. 59

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	14. 10. 43	* 1	15. 1. 43	5	1. 14. 8 Im.
4	8. 38. 55	5	4. 17. 36	5	3. 18. 25 E.
6	3. 7. 9	* 8	17. 33. 44	12	5. 11. 35 Im.
7	21. 35. 24	12	6. 50. 7	12	7. 15. 12 E.
* 9	16. 3. 43	15	20. 6. 34	19	9. 9. 46 Im.
11	10. 32. 3	19	9. 23. 14	19	11. 12. 42 E.
13	5. 0. 28	22	22. 40. 3	* 26	13. 8. 32 Im.
14	23. 28. 54	* 26	11. 57. 2	* 26	15. 10. 53 E.
* 16	17. 57. 23				
* 18	12. 25. 52				
20	6. 54. 29				
22	1. 23. 2				
23	19. 51. 42				
* 25	14. 20. 20				
27	8. 49. 6				
29	3. 17. 49				
IV. Satellite. Conj.					
				1	22. 50 $\frac{1}{2}$ Sup.
				10.	7. 20 $\frac{1}{2}$ Inf.
				* 18	15. 53 Sup.
				26	23. 59 Inf.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY.							
					Inf. 66 <sup>d</sup> . 19 <sup>h</sup> 7 <sup>m</sup> .		
1	3. 14. 12	5. 57 N	10. 22. 59	2. 35 N	11. 26 S	0. 42	
4	4. 1. 55	6. 47	10. 20. 34	3. 16	11. 33	0. 19	
7	4. 18. 21	7. 0	10. 17. 12	3. 39	12. 13	23. 45	
10	5. 3. 20	6. 41	10. 13. 43	3. 40	13. 13	23. 21	
13	5. 16. 56	6. 1	10. 10. 52	3. 23	14. 16	23. 0	
16	5. 29. 17	5. 7	10. 9. 5	2. 53	15. 14	22. 43	
19	6. 10. 35	4. 4	10. 8. 26	2. 16	16. 0	22. 31	
22	6. 21. 1	2. 58	10. 8. 49	1. 37	16. 31	22. 23	
25	7. 0. 45	1. 51	10. 10. 4	0. 59	16. 48	22. 18	
28	7. 9. 57	0. 45	10. 12. 2	0. 23	16. 50	22. 16	
♀ VENUS.							
1	0. 14. 54	2. 56 S	11. 7. 49	1. 27 S	10. 08	1. 44	
7	0. 24. 28	2. 37	11. 15. 14	1. 19	7. 2	1. 48	
13	1. 4. 3	2. 13	11. 22. 38	1. 8	3. 58	1. 51	
19	1. 13. 39	1. 46	0. 0. 0	0. 55	0. 51 6	1. 54	
25	1. 23. 17	1. 15	0. 7. 20	0. 40	2. 18 N	1. 58	
♂ MARS.							
1	9. 17. 16	1. 35 S	9. 27. 11	0. 57 S	21. 41 S	23. 1	
7	9. 20. 54	1. 39	10. 1. 50	1. 0	20. 45	22. 56	
13	9. 24. 33	1. 42	10. 6. 31	1. 2	19. 40	22. 52	
19	9. 28. 15	1. 44	10. 11. 12	1. 3	18. 27	22. 48	
25	10. 1. 57	1. 47	10. 15. 53	1. 5	17. 8	22. 44	
♃ JUPITER.							
1	6. 24. 56	1. 16 N	7. 5. 19	1. 19 N	12. 4 S	17. 15	
7	6. 25. 24	1. 16	7. 5. 36	1. 20	12. 9	16. 52	
13	6. 25. 51	1. 16	7. 5. 48	1. 22	12. 11	16. 29	
19	6. 26. 18	1. 16	7. 5. 52	1. 23	12. 11	16. 6	
25	6. 26. 46	1. 15	7. 5. 50	1. 24	12. 10	15. 42	
♄ SATURN.							
1	5. 28. 34	2. 18 N	6. 3. 16	2. 28 N	0. 58 N	15. 17	
7	5. 28. 47	2. 18	6. 3. 2	2. 30	1. 5	14. 52	
13	5. 28. 59	2. 18	6. 2. 45	2. 31	1. 13	14. 28	
19	5. 29. 11	2. 19	6. 2. 25	2. 32	1. 22	14. 3	
25	5. 29. 23	2. 19	6. 2. 2	2. 33	1. 32	13. 39	
♅ GEORGIAN.							
1	6. 13. 52	0. 40 N	6. 16. 41	0. 41 N	5. 50 S	10. 4	
11	6. 14. 0	0. 40	6. 16. 32	0. 41	5. 53	15. 23	
21	6. 14. 8	0. 40	6. 16. 19	0. 41	5. 47	14. 44	

Days of the Week.	Days of the Month.	THE MOONS			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	6. 16. 22. 14	6. 22. 20. 7	4. 41. 6 S	4. 54. 51 S
Th.	2	6. 28. 16. 50	7. 4. 13. 1	5. 5. 22	5. 12. 37
F.	3	7. 10. 9. 13	7. 16. 6. 2	5. 16. 31	5. 17. 4
Sa.	4	7. 22. 4. 4	7. 28. 3. 55	5. 14. 12	5. 7. 55
Sun.	5	8. 4. 6. 9	8. 10. 11. 18	4. 58. 12	4. 45. 3
M.	6	8. 16. 19. 54	8. 22. 32. 26	4. 28. 32	4. 8. 43
Tu.	7	8. 28. 49. 19	9. 5. 10. 54	3. 45. 42	3. 19. 36
W.	8	9. 11. 37. 29	9. 18. 9. 16	2. 50. 39	2. 19. 5
Th.	9	9. 24. 46. 21	10. 1. 28. 45	1. 45. 14	1. 9. 28 S
F.	10	10. 8. 16. 22	10. 15. 8. 58	0. 32. 17 S	0. 5. 49 N
S.	11	10. 22. 6. 14	10. 29. 7. 47	0. 44. 17 N	1. 22. 25
Sun.	12	11. 6. 13. 4	11. 13. 21. 30	1. 59. 37	2. 35. 13
M.	13	11. 20. 32. 26	11. 27. 45. 13	3. 8. 32	3. 39. 0
Tu.	14	0. 4. 59. 8	0. 12. 13. 28	4. 6. 2	4. 29. 7
W.	15	0. 19. 27. 36	0. 26. 40. 56	4. 47. 54	5. 2. 5
Th.	16	1. 3. 52. 53	1. 11. 3. 2	5. 11. 27	5. 15. 56
F.	17	1. 18. 10. 59	1. 25. 16. 23	5. 15. 30	5. 10. 16
Sa.	18	2. 2. 19. 3	2. 9. 18. 44	5. 0. 23	4. 46. 6.
Sun.	19	2. 16. 15. 19	2. 23. 8. 46	4. 27. 43	4. 5. 36
M.	20	2. 29. 58. 59	3. 6. 45. 58	3. 40. 8	3. 11. 46
Tu.	21	3. 13. 29. 43	3. 20. 10. 15	2. 40. 57	2. 8. 11
W.	22	3. 26. 47. 34	4. 3. 21. 43	1. 33. 58	0. 58. 46 N
Th.	23	4. 9. 52. 44	4. 16. 20. 38	0. 23. 6 N	0. 12. 34 S
F.	24	4. 22. 45. 26	4. 29. 7. 11	0. 47. 45 S	1. 22. 3
Sa.	25	5. 5. 25. 55	5. 11. 41. 41	1. 55. 1	2. 26. 18.
Sun.	26	5. 17. 54. 35	5. 24. 4. 42	2. 55. 36	3. 22. 34.
M.	27	6. 0. 12. 9	6. 6. 17. 7	3. 46. 57	4. 8. 36
Tu.	28	6. 12. 19. 49	6. 18. 20. 28	4. 27. 18	4. 42. 56.
W.	29	6. 24. 19. 24	7. 0. 16. 58	4. 55. 23	5. 4. 34

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
W.	1	21	16. 25	193. 15	198. 46	10. 46 S	13. 15 S
Th.	2	22	17. 8	204. 23	210. 7	15. 37	17. 50
F.	3	23	17. 54	215. 58	221. 59	19. 53	21. 44
Sa.	4	24	18. 42	228. 11	234. 32	23. 22	24. 45
Sun.	5	25	19. 33	241. 5	247. 47	25. 52	26. 42
M.	6	26	20. 27	254. 38	261. 37	27. 13	27. 24
Tu.	7	27	21. 22	268. 41	275. 48	27. 12	26. 41
W.	8	28	22. 16	282. 55	290. 1	25. 48	24. 32
Th.	9	29	23. 9	297. 3	304. 0	22. 55	20. 59
F.	10	1	6	310. 51	317. 35	18. 44	16. 13
Sa.	11	2	0. 1	324. 14	330. 46	13. 28	10. 30
Sun.	12	3	0. 51	337. 15	343. 40	7. 23	4. 10 S
M.	13	4	1. 40	350. 4	356. 29	0. 52 S	2. 27 N
Tu.	14	5	2. 29	3. 56	9. 28	5. 45 N	8. 58
W.	15	6	3. 20	16. 6	22. 52	12. 3	14. 59
Th.	16	7	4. 13	29. 47	36. 53	17. 42	20. 9
F.	17	8	5. 9	44. 8	51. 34	22. 18	24. 7
Sa.	18	9	6. 8	59. 8	66. 49	25. 33	26. 35
Sun.	19	10	7. 8	74. 34	82. 18	27. 12	27. 23
M.	20	11	8. 8	89. 59	97. 33	27. 8	26. 29
Tu.	21	12	9. 5	104. 57	112. 10	25. 27	24. 4
W.	22	13	9. 58	119. 10	125. 55	22. 21	20. 23
Th.	23	14	10. 48	132. 26	138. 44	18. 10	15. 45
F.	24	15	11. 34	144. 50	150. 46	13. 12	10. 31
Sa.	25	16	12. 17	156. 32	162. 11	7. 45	4. 56 N
Sun.	26	17	12. 59	167. 44	173. 14	2. 5 N	0. 45 S
M.	27	18	13. 40	178. 41	184. 7	3. 33 S	6. 18
Tu.	28	19	14. 21	189. 35	195. 5	8. 58	11. 33
W.	29	20	15. 4	200. 39	206. 19	14. 1	16. 20

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
W.	1	14. 52	14. 50	54. 32	54. 26	5186	5194
Th.	2	14. 49	14. 49	54. 23	54. 22	5198	5199
F.	3	14. 49	14. 50	54. 24	54. 28	5197	5191
Sa.	4	14. 52	14. 55	54. 34	54. 44	5183	5170
Sun.	5	14. 58	15. 2	54. 56	55. 10	5154	5136
M.	6	15. 6	15. 11	55. 26	55. 45	5115	5090
Tu.	7	15. 17	15. 23	56. 5	56. 26	5064	5037
W.	8	15. 29	15. 35	56. 48	57. 11	5009	4980
Th.	9	15. 41	15. 47	57. 34	57. 57	4951	4922
F.	10	15. 53	15. 59	58. 18	58. 38	4896	4871
Sa.	11	16. 4	16. 8	58. 57	59. 13	4848	4828
Sun.	12	16. 12	16. 15	59. 27	59. 38	4811	4798
M.	13	16. 17	16. 19	59. 46	59. 52	4788	4781
Tu.	14	16. 20	16. 20	59. 55	59. 56	4777	4776
W.	15	16. 19	16. 18	59. 53	59. 49	4779	4784
Th.	16	16. 16	16. 14	59. 43	59. 36	4792	4800
F.	17	16. 12	16. 9	59. 26	59. 16	4812	4824
Sa.	18	16. 6	16. 3	59. 5	58. 53	4838	4853
Sun.	19	15. 59	15. 56	58. 41	58. 28	4867	4883
M.	20	15. 52	15. 48	58. 14	58. 0	4991	4918
Tu.	21	15. 44	15. 41	57. 46	57. 32	4986	4953
W.	22	15. 37	15. 33	57. 18	57. 4	4971	4989
Th.	23	15. 29	15. 25	56. 49	56. 33	5068	5028
F.	24	15. 21	15. 17	56. 18	56. 4	5048	5065
Sa.	25	15. 13	15. 9	55. 49	55. 35	5085	5103
Sun.	26	15. 5	15. 2	55. 22	55. 9	5120	5137
M.	27	14. 58	14. 55	54. 57	54. 46	5153	5167
Tu.	28	14. 53	14. 51	54. 37	54. 29	5179	5190
W.	29	14. 49	14. 48	54. 23	54. 18	5198	5205

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	1	50.28.57		48.59.35		47.30.19		46.1.9		44.32.5		43.3.7		41.34.12		40.5.22	
	2	38.36.35		37.7.51		35.39.8		34.10.27		32.41.47		31.13.8		29.44.28		28.15.47	
	3	26.47.5		25.18.21		23.49.34		22.20.43		20.51.49							
The Sun.	1	115.3.6		113.41.18		112.19.36		110.58.0		109.36.39		108.15.6		106.53.46		105.32.30	
	2	104.11.18		102.50.8		101.28.59		100.7.52		98.46.46		97.25.41		96.4.34		94.43.27	
	3	93.22.19		92.1.9		90.39.55		89.18.38		87.57.17		86.35.52		85.14.22		83.52.45	
	4	82.31.3		81.9.13		79.47.15		78.25.8		77.2.53		75.40.29		74.17.54		72.55.8	
	5	71.32.12		70.9.4		68.45.44		67.22.10		65.58.24		64.34.24		63.10.9		61.45.39	
	6	60.20.54		58.55.53		57.30.35		56.5.1		54.39.10		53.13.1		51.46.34		50.19.49	
	7	48.52.45		47.25.22		45.57.40		44.29.38		43.1.17		41.32.36		40.3.34		38.34.12	
	8	37.4.29															
Aldebaran.	12	-		-		-		-		83.58.53		82.12.55		80.26.50		78.40.40	
	13	76.54.25		75.8.6		73.21.45		71.35.23		69.48.59		68.2.35		66.16.14		64.29.55	
	14	62.43.38		60.57.26		59.11.20		57.25.21		55.39.29		53.53.45		52.8.13		50.22.53	
	15	48.37.44		46.52.48		45.8.11		43.23.52		41.39.52		39.56.11		38.13.0		36.30.19	
	16	34.48.7		33.6.34		31.25.40		29.45.30		28.6.7							

Stars Names.	Days	Noon.		III <sup>b</sup> .		VI <sup>b</sup> .		IX <sup>b</sup> .		Midnight.		XV <sup>b</sup> .		XVIII <sup>b</sup> .		XX <sup>b</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Pollux.	16	-	-	-	-	-	-	-	-	69. 3.42	69. 3.42	67. 17.20	67. 17.20	65. 31. 7	65. 31. 7	63. 45. 4	63. 45. 4
	17	61. 59. 11	-	60. 13. 29	-	58. 27. 35	-	56. 42. 33	-	54. 57. 21	-	53. 12. 20	-	51. 27. 30	-	49. 42. 52	-
	18	47. 58. 25	-	46. 14. 11	-	44. 30. 9	-	42. 46. 20	-	44. 2. 44	-	-	-	-	-	-	-
Regulus.	18	-	-	-	-	-	-	-	-	77. 48. 38	77. 48. 38	76. 4. 31	76. 4. 31	74. 20. 35	74. 20. 35	72. 36. 48	72. 36. 48
	19	70. 53. 11	-	69. 9. 44	-	67. 26. 28	-	65. 43. 23	-	64. 0. 28	-	62. 17. 45	-	60. 35. 12	-	58. 52. 50	-
	20	57. 10. 39	-	55. 28. 38	-	53. 46. 48	-	52. 5. 9	-	50. 23. 40	-	48. 42. 23	-	47. 1. 16	-	45. 20. 21	-
	21	43. 39. 36	-	41. 59. 2	-	40. 18. 40	-	38. 38. 29	-	36. 58. 29	-	35. 18. 41	-	33. 39. 4	-	31. 59. 39	-
	22	30. 20. 26	-	28. 41. 25	-	27. 2. 36	-	25. 24. 0	-	23. 45. 37	-	22. 7. 27	-	20. 29. 32	-	18. 51. 50	-
Spica $\pi$	23	17. 14. 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	71. 15. 56	-	69. 38. 24	-	68. 1. 3	-	66. 23. 54	-	64. 46. 57	-	63. 10. 12	-	61. 32. 39	-	59. 57. 18	-
	24	58. 21. 9	-	56. 45. 12	-	55. 9. 28	-	53. 33. 56	-	51. 58. 37	-	50. 23. 30	-	48. 48. 35	-	47. 13. 53	-
	25	45. 39. 24	-	44. 5. 7	-	42. 31. 4	-	40. 57. 13	-	39. 23. 35	-	37. 50. 10	-	36. 16. 58	-	34. 43. 59	-
	26	33. 11. 13	-	31. 38. 40	-	30. 6. 21	-	28. 34. 17	-	27. 2. 26	-	25. 30. 50	-	23. 59. 29	-	22. 28. 23	-
Antares.	27	20. 57. 33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	27	66. 38. 4	-	65. 6. 38	-	63. 35. 22	-	62. 4. 16	-	60. 33. 20	-	59. 2. 34	-	57. 31. 57	-	56. 1. 29	-
	28	54. 31. 11	-	53. 1. 1	-	51. 31. 0	-	50. 1. 6	-	48. 31. 21	-	47. 1. 44	-	45. 32. 12	-	44. 2. 48	-
	29	42. 33. 29	-	41. 4. 17	-	39. 35. 9	-	38. 6. 7	-	36. 37. 10	-	35. 8. 17	-	33. 39. 28	-	32. 10. 42	-
	M. 1	30. 41. 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# *DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Nees.		III.		VI.		IX.		Midnight.		XV.		XVIII.		XXI.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	49.28.8	50.57.27	52.26.39	53.55.46	55.24.47	56.53.42	57.14.44	58.28.34	59.51.21	61.14.44	62.36.52	63.57.27	65.18.42	66.39.57	68.01.12	69.22.27
	2	61.20.5	62.48.47	64.17.27	65.46.6	67.14.44	68.43.22	70.12.0	71.40.38	73.09.15	74.37.52	76.06.29	77.35.06	79.03.43	80.32.20	82.00.57	83.29.34
	3	73.9.18															
	4	19.16.15	20.44.5	22.12.4	23.40.11	25.08.38	26.36.52	28.05.06	29.33.20	31.01.34	32.29.48	33.57.62	35.25.16	36.53.30	38.21.44	39.49.58	41.18.12
Spica $\pi$ .	5	31.3.0	32.32.1	34.1.14	35.30.32	37.0.46	38.29.43	39.58.57	41.28.11	43.0.0	44.29.14	46.0.27	47.30.41	49.0.55	50.31.69	52.0.83	53.31.97
	6	42.59.54	44.30.23	46.1.5	47.32.0	49.3.14	50.34.31	52.0.58	53.36.12	55.7.26	56.38.40	58.0.6	59.31.24	61.3.38	63.6.52	65.0.66	66.33.80
	7	55.10.14	56.42.36	58.15.19	59.48.18	61.21.34	62.55.8	64.29.1	66.3.41	68.0.55	69.34.9	71.0.19	72.31.33	74.0.47	75.32.61	77.0.75	78.33.89
	8	67.37.41															
Antares.	9	21.43.54	23.19.49	24.55.5	26.30.41	28.6.36	29.42.52	31.19.28	32.56.24	34.33.0	36.9.14	37.45.28	39.21.42	40.57.56	42.34.10	44.10.24	45.46.38
	10	33.33.41	35.11.19	37.49.18	39.27.38	41.6.19	42.45.22	44.24.45	46.4.30	48.0.44	49.31.58	51.0.12	52.32.26	54.0.40	55.33.54	57.0.68	58.41.82
	11	47.44.35	49.25.1	51.5.48	52.46.56	54.28.24	56.0.40	57.31.44	59.4.48	61.0.52	62.33.6	64.6.6	65.39.10	67.1.14	68.34.18	70.0.22	71.33.26
	12	40.29.5	42.9.59	43.59.52	45.31.44	47.12.34	48.53.22	50.34.7	52.14.48	54.0.52	55.42.6	57.23.10	59.0.14	60.43.18	62.24.22	64.0.26	65.41.30
The Sun.	13	53.55.26	55.36.0	57.16.29	58.56.53	60.37.11	62.17.23	63.57.27	65.37.36	67.17.40	69.0.44	70.40.58	72.21.12	74.0.16	75.41.30	77.21.44	79.0.48
	14	67.47.17	68.57.1	70.36.38	72.16.6	73.55.27	75.34.39	77.13.42	78.52.37	80.31.41	82.10.45	83.49.59	85.29.13	87.8.17	88.47.31	90.26.35	92.5.39
	15	80.31.22	82.9.58	83.48.34	85.26.41	87.4.49	88.42.47	90.20.35	92.5.13	94.40.27	96.15.41	97.50.55	99.26.9	101.1.13	102.46.27	104.21.41	106.46.55
	16	93.35.41	95.12.59	96.50.7	98.27.5	100.6.52	101.40.28	103.16.54	104.53.9	106.29.17	108.0.43	109.26.17	111.2.41	112.24.55	114.0.9	115.26.13	117.0.27
	17	106.29.14	108.5.10	109.40.55	111.16.29	112.51.53	114.27.6	116.2.8	117.36.58	119.12.12	120.37.26	122.1.40	123.26.54	125.0.8	126.25.12	128.0.26	129.25.40
	18	119.11.38	120.46.8														
	19																
	20																

Stars Names.	Days	Noon.	III <sup>b</sup> .	VI <sup>a</sup> .	IX <sup>a</sup> .	Midnight.	XV <sup>a</sup> .	XVIII <sup>a</sup> .	XXI <sup>a</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	17	- - -	- - -	- - -	- - -	20.43.33	22.26.27	24. 9.28	25.52.35
	18	27.35.46	29.19. 0	31. 2.14	32.45.27	34.28.39	36.12.44	37.54.44	39.37.39
	19	41.26.28	43. 3. 9	44.45.43	46.28. 9	48.16.28	49.52.38	51.34.39	53.16.31
	20	54.58.13	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	20	24.39.32	26.22.26	27.46. 4	29.20.17	30.55. 3	32.30.19	34. 5.54	35.41.49
	21	37.18. 3	38.54.21	40.30.46	42. 7.17	43.43.54	45.20.30	46.57. 6	48.33.41
	22	50.10.16	51.46.47	53.23.13	54.59.35	56.35.53	58.12. 4	59.48. 9	61.24. 6
	23	62.59.57	64.35.40	66.11.14	67.46.40	69.21.57	70.57. 5	72.32. 3	74. 6.51
Pollux.	24	75.41.28	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	24	33. 1. 0	34.36. 8	36.11. 7	37.45.59	39.20.42	40.55.16	42.29.41	44. 3.57
	25	45.38. 3	47.11.59	48.45.44	50.19.19	51.54.44	53.25.58	54.59. 2	56.31.54
	26	58. 4.36	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	26	21. 3.20	22.36. 5	24. 8.34	25.40.53	27.13. 2	28.45. 1	30.16.50	31.48.29
	27	33.19.58	34.51.17	36.22.26	37.53.26	39.24.16	40.54.57	42.25.29	43.55.52
	28	45.26. 6	46.56.11	48.26. 9	49.55.58	51.25.40	52.54.14	54.24.42	55.54. 4
	29	57.23.19	58.52.28	60.21.33	61.50.32	63.19.27	64.48.17	66.17. 4	67.45.47
	M.1	09.14.27	- - -	- - -	- - -	- - -	- - -	- - -	- - -

# CONFIGURATIONS of the SATELLITES of JUPITER at V o'Clock in the *Morning*.

1		.3		○	1.	.2	4.
2	2 ● 3. ○			.1 ○	4.		
3	1 ●		.2	○		.3	
4		4.		○ 1 6 2		3.	
5	4		1.	○	2 6 3		
6	4.		2. 3.	○	.1		
7	.4		1 6 2	○			
8		.4	.3	○	1.	.2	
9		.4		.1. 3 ○	2.		
10	1 ●		2.	.4 ○		.3	
11				○ 1 6 2 .4		3.	
12			1.	○		2. 3.	.4
13			2. 3.	○	.1		.4
14		3.	.4	○			.4
15		.3	1.	○	1.	.2	4.
16				1 6 3 ○	2.		4.
17			2.	○	1.	.3	4.
18	1. ○ 2. ○			○		4.	.3
19				1. 4. ○		2. 3.	
20		4.		2. 3. ○	.1		
21		4.	3.	.2 1. ○			
22	4.		.3	○	1 6 2		
23	4.			.3 .1 ○	2.		
24	.4		2.	○	1.	.3	
25		.4		.2. 1 ○		.3	
26	1 ●		.4	○		.2	1.
27				.4 2. ○	1.	.1	
28			3. .2	1. ○		.4	
29			.3	○	1 6 2		.4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter ---- 4. 3. 52 ● New Moon ---- 11. 10. 51 ☽ First Quarter --- 18. 1. 42 ○ Full Moon --- 25. 17. 21	
			Other Phenomena.	
			D. H. M.	
Th.	1	David.	3. 0. 27	☽ π m
F.	2	Chad.	3. 10. 12	☽ σ m
Sa.	3		3. 14. 8	☽ α m
Sun.	4	3 <sup>d</sup> Sunday in Lent.	4. - -	☽ ζ ♄, * 3½ N.
M.	5		4. 13. 53	☽ 43 Ophiuchi.
Tu.	6		6. 1. 37	☽ φ ♄
W.	7	Perpetua.	6. 5. 48	☽ σ ♄
Th.	8		8. - -	☽ ι ♄, * 56½ S.
F.	9		9. 11. 13	☽ ξ
Sa.	10		12. - -	☽ ι ♄, * 29 S.
Sun.	11	4 <sup>th</sup> Su. in Lent. Mid L. Su.	13. 15. 51	☽ η ♄
M.	12	Gregory, M.	15. 21. 49	☽ η Pleiadum.
Tu.	13		16. - -	☽ δ, ξ 50 S.
W.	14		17. 11. 56	☽ β δ
Th.	15		18. 18. 18	☽ ε π
F.	16		19. 18. 59	☽ κ π
Sa.	17		20. 7. 3	☾ enters ♑
Sun.	18	5 <sup>th</sup> Sunday in Lent.	20. 22. 42	☽ δ ☽
M.	19		22. 9. 52	☽ γ δ
Tu.	20		24. - -	☽ λ ♄, * 58 S.
W.	21	Benedict.	25. - -	☽ λ ♄, * 46 N.
Th.	22		30. 7. 41	☽ π m
F.	23	Camb. Term ends.	30. 17. 30	☽ σ m
Sa.	24	Oxford Term ends.	30. 21. 27	☽ α m
Sun.	25	Palm Sunday. Annun. of	31. 21. 30	☽ 43 Ophiuchi.
M.	26	[V. Mary.		
Tu.	27			
W.	28			
Th.	29			
F.	30			
Sa.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	11.10.45.51	22.49. 0, 3	7.32.17	12.38, 7	12, 4
F.	2	11.11.45.57	22.52.44, 4	7. 9.27	12.26, 3	12, 9
Sa.	3	11.12.46. 1	22.56.28, 1	6.46.30	12.13, 4	13, 3
Sun.	4	11.13.46. 3	23. 0.11, 4	6.23.27	12. 0, 1	13, 7
M.	5	11.14.46. 4	23. 3.54, 2	6. 0.19	11.46, 4	14, 1
Tu.	6	11.15.46. 3	23. 7.36, 6	5.37. 6	11.32, 3	14, 5
W.	7	11.16.46. 1	23.11.18, 6	5.13.48	11.17, 8	14, 9
Th.	8	11.17.45.57	23.15. 0, 2	4.50.26	11. 2, 9	15, 3
F.	9	11.18.45.51	23.18.41, 4	4.27. 0	10.47, 6	15, 6
Sa.	10	11.19.45.43	23.22.22, 3	4. 3.30	10.32, 0	15, 9
Sun.	11	11.20.45.34	23.26. 2, 9	3.39.58	10.16, 1	16, 3
M.	12	11.21.45.22	23.29.43, 1	3.16.23	9.59, 8	16, 5
Tu.	13	11.22.45. 9	23.33.23, 1	2.52.46	9.43, 3	16, 9
W.	14	11.23.44.53	23.37. 2, 8	2.29. 7	9.26, 4	17, 1
Th.	15	11.24.44.35	23.40.42, 2	2. 5.27	9. 9, 3	17, 3
F.	16	11.25.44.15	23.44.21, 3	1.41.45	8.52, 0	17, 6
Sa.	17	11.26.43.53	23.48. 0, 2	1.18. 3	8.34, 4	17, 8
Sun.	18	11.27.43.28	23.51.39, 0	0.54.21	8.16, 6	18, 0
M.	19	11.28.43. 0	23.55.17, 5	0.30.39	7.58, 6	18, 2
Tu.	20	11.29.42.31	23.58.55, 8	0. 6.58	7.40, 4	18, 3
W.	21	0. 0.41.59	0. 2.34, 0	<i>North.</i> 0.16.43	7.22, 1	18, 4
Th.	22	0. 1.41.24	0. 6.12, 1	0.40.22	7. 3, 7	18, 6
F.	23	0. 2.40.48	0. 9.50, 0	1. 4. 1	6.45, 1	18, 6
Sa.	24	0. 3.40. 9	0.13.27, 9	1.27.37	6.26, 5	18, 7
Sun.	25	0. 4.39.28	0.17. 5, 7	1.51.11	6. 7, 8	18, 7
M.	26	0. 5.38.44	0.20.43, 5	2.14.42	5.49, 1	18, 7
Tu.	27	0. 6.37.59	0.24.21, 3	2.38.11	5.30, 4	18, 7
W.	28	0. 7.37.11	0.27.59, 1	3. 1.36	5.11, 7	18, 7
Th.	29	0. 8.36.22	0.31.36, 9	3.24.58	4.53, 0	18, 6
F.	30	0. 9.35.31	0.35.14, 8	3.48.16	4.34, 4	18, 6
Sa.	31	0.10.34.39	0.38.52, 8	4.11.30	4.15, 8	

Days	Time of $\odot$ 's Semidiam. pass <sup>t</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5. 3	16. 10. 9	2. 30. 3	9.996353	10. 12. 43
7	1. 4. 9	16. 9. 4	2. 29. 8	9.997057	10. 12. 24
13	1. 4. 6	16. 7. 7	2. 29. 3	9.997769	10. 12. 5
19	1. 4. 4	16. 6. 1	2. 28. 9	9.998486	10. 11. 46
25	1. 4. 3	16. 4. 5	2. 28. 4	9.999220	10. 11. 27

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	21. 46. 37	1	1. 14. 9	* 4	17. 7. 48 Im.
* 3	16. 15. 25	* 4	14. 31. 21	4	19. 9. 34 E.
5	10. 44. 15	8	3. 48. 41	11	21. 7. 32 Im.
7	5. 13. 5	* 11	17. 6. 2	11	23. 8. 42 E.
8	23. 41. 57	15	6. 23. 32	19	1. 7. 38 Im.
10	18. 10. 49	18	10. 41. 10	19	3. 8. 13 E.
* 12	12. 39. 42	22	8. 58. 50	26	5. 8. 1 Im.
14	7. 8. 38	25	22. 16. 37	26	7. 8. 1 E.
16	1. 37. 35	* 29	11. 34. 23		
17	20. 6. 36				
* 19	14. 35. 32				
21	9. 4. 35				
23	3. 33. 34				
24	22. 2. 37				
* 26	16. 31. 36				
* 28	11. 0. 40				
30	5. 29. 40				
31	23. 58. 44				
IV. Satellite. Conj.					
				6	8. 1 Sup.
				* 14	15. 43 Inf.
				22	23. 16 Sup.
				31	6. 39 Inf.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S.D.M.	D.M.	S.D.M.	D.M.		D.M.	H.M.
♿ Gr. Elong. 3 <sup>d</sup> . MERCURY.							
1	7.15.51	0.1 N	10.13.39	0.1 N	16.44 S	22.16	
4	7.24.27	1.2 S	10.16.29	0.30 S	16.24	22.17	
7	8.2.49	2.2	10.19.42	0.57	15.49	22.19	
10	8.11.5	2.59	10.23.16	1.21	15.3	22.23	
13	8.19.19	3.51	10.27.6	1.40	14.4	22.28	
16	8.27.38	4.40	11.1.11	1.56	12.53	22.33	
19	9.6.6	5.23	11.5.30	2.8	11.30	22.39	
22	9.14.49	6.0	11.10.2	2.17	9.56	22.46	
25	9.23.55	6.30	11.14.46	2.21	8.10	22.53	
28	10.3.30	6.50	11.19.43	2.21	6.14	23.0	
31	10.13.42	7.0	11.24.52	2.16	4.8	23.8	
♀ VENUS.							
1	2.1.18	0.48 S	0.13.26	0.26 S	4.54 N	2.1	
7	2.10.58	0.14 S	0.20.42	0.8 S	7.58	2.5	
13	2.20.38	0.20 N	0.27.55	0.12 N	10.56	2.10	
19	3.0.20	0.54	1.5.5	0.32	13.44	2.15	
25	3.10.1	1.26	1.12.12	0.53	16.21	2.21	
♂ MARS.							
1	10.5.4	1.48 S	10.19.48	1.6 S	15.56 S	22.41	
7	10.8.48	1.50	10.24.30	1.7	14.26	22.37	
13	10.12.34	1.50	10.29.12	1.8	12.50	22.33	
19	10.16.21	1.51	11.3.55	1.9	11.9	22.29	
25	10.20.8	1.51	11.8.36	1.9	9.26	22.25	
♃ JUPITER.							
1	6.27.8	1.15 N	7.5.43	1.25 N	12.6 S	15.24	
7	6.27.36	1.15	7.5.29	1.26	12.0	15.1	
13	6.28.3	1.15	7.5.8	1.27	11.52	14.38	
19	6.28.30	1.15	7.4.41	1.28	11.43	14.14	
25	6.28.57	1.14	7.4.8	1.29	11.31	13.50	
♄ SATURN.							
					8 20 <sup>d</sup> . 12 <sup>h</sup> 4.		
1	5.29.33	2.19 N	6.1.41	2.34 N	1.41 N	13.19	
7	5.29.45	2.19	6.1.15	2.35	1.53	12.55	
13	5.29.57	2.19	6.0.48	2.36	2.4	12.32	
19	6.0.10	2.20	6.0.20	2.36	2.15	12.8	
25	6.0.22	2.20	5.29.51	2.36	2.27	11.45	
♂ GEORGIAN.							
1	6.14.15	0.40 N	6.16.3	0.41 N	5.41 S	14.9	
11	6.14.22	0.40	6.15.42	0.42	5.33	13.31	
21	6.14.30	0.40	6.15.18	0.42	5.24	12.53	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	7. 6. 13. 32	7. 12. 9. 33	5. 10. 26 S	5. 12. 59 S
F.	2	7. 18. 5. 28	7. 24. 1. 50	5. 12. 11	5. 8. 2
Sa.	3	7. 29. 59. 11	8. 5. 58. 2	5. 0. 34	4. 49. 49
Sun.	4	8. 11. 59. 1	8. 18. 2. 41	4. 35. 48	4. 18. 37
M.	5	8. 24. 9. 39	9. 0. 20. 33	3. 58. 21	3. 35. 6
Tu.	6	9. 6. 35. 54	9. 12. 56. 17	3. 9. 1	2. 40. 16
W.	7	9. 19. 22. 9	9. 25. 53. 56	2. 9. 6	1. 35. 48
Th.	8	10. 2. 32. 0	10. 9. 16. 35	1. 0. 42 S	0. 24. 13 S
F.	9	10. 16. 7. 45	10. 23. 5. 28	0. 13. 12 N	0. 50. 58 N
Sa.	10	11. 0. 9. 30	11. 7. 19. 30	1. 28. 29	2. 5. 5
Sun.	11	11. 14. 34. 52	11. 21. 54. 50	2. 40. 6	3. 12. 47
M.	12	11. 29. 18. 33	0. 6. 44. 57	3. 42. 29	4. 8. 34
Tu.	13	0. 14. 13. 0	0. 21. 41. 31	4. 30. 29	4. 47. 48
W.	14	0. 29. 9. 24	1. 6. 35. 33	5. 0. 9	5. 7. 25
Th.	15	1. 13. 59. 3	1. 21. 19. 3	5. 9. 29	5. 6. 28
F.	16	1. 28. 34. 55	2. 5. 46. 7	4. 58. 32	4. 45. 58
Sa.	17	2. 12. 52. 18	2. 19. 53. 17	4. 29. 7	4. 8. 25
Sun.	18	2. 26. 48. 59	3. 3. 39. 29	3. 44. 17	3. 17. 15
M.	19	3. 10. 24. 53	3. 17. 5. 27	2. 47. 45	2. 16. 19
Tu.	20	3. 23. 41. 27	4. 0. 13. 10	1. 43. 24	1. 9. 30
W.	21	4. 6. 40. 55	4. 13. 5. 3	0. 35. 3 N	0. 0. 32 N
Th.	22	4. 19. 25. 51	4. 25. 43. 39	0. 33. 41 S	1. 7. 10 S
F.	23	5. 1. 58. 43	5. 8. 11. 16	1. 39. 32	2. 10. 28
Sa.	24	5. 14. 21. 31	5. 20. 29. 39	2. 39. 38	3. 6. 43
Sun.	25	5. 26. 35. 49	6. 2. 40. 12	3. 31. 28	3. 53. 39
M.	26	6. 8. 42. 54	6. 14. 44. 4	4. 13. 4	4. 29. 32
Tu.	27	6. 20. 43. 50	6. 26. 42. 24	4. 42. 57	4. 53. 11
W.	28	7. 2. 39. 55	7. 8. 36. 36	5. 0. 11	5. 3. 54
Th.	29	7. 14. 32. 44	7. 20. 28. 33	5. 4. 20	5. 1. 29
F.	30	7. 26. 24. 25	8. 2. 20. 42	4. 55. 22	4. 46. 3
Sa.	31	8. 8. 17. 49	8. 14. 16. 17	4. 33. 37	4. 18. 8



THE MOON'S								
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.		
			Merid.	Noon.	Midnight.	Noon.	Midnight.	
			H. M.	D. M.	D. M.	D. M.	D. M.	
Th.	1	21	15. 48	212. 6	218. 0	18. 29 S	20. 28 S	
F.	2	22	16. 36	224. 4	230. 16	22. 14	23. 46	
Sa.	3	23	17. 26	236. 38	243. 8	25. 4	26. 5	
Sun.	4	24	18. 18	249. 48	256. 34	26. 48	27. 13	
M.	5	25	19. 11	263. 26	270. 23	27. 18	27. 3	
Tu.	6	26	20. 5	277. 22	284. 21	26. 27	25. 30	
W.	7	27	20. 59	291. 18	298. 13	24. 12	22. 34	
Th.	8	28	21. 51	305. 4	311. 50	20. 36	18. 21	
F.	9	29	22. 42	318. 31	325. 9	15. 49	13. 2	
Sa.	10	30	23. 32	331. 43	338. 15	10. 3	6. 54	
Sun.	11	1	0	344. 46	351. 18	3. 37 S	0. 16 S	
M.	12	2	0. 23	357. 53	4. 33	3. 8 N	6. 29 N	
Tu.	13	3	1. 15	11. 19	18. 12	9. 46	12. 54	
W.	14	4	2. 9	25. 16	32. 29	15. 51	18. 34	
Th.	15	5	3. 6	39. 52	47. 26	20. 58	23. 2	
F.	16	6	4. 6	55. 8	62. 56	24. 43	25. 59	
Sa.	17	7	5. 8	70. 48	78. 39	26. 49	27. 12	
Sun.	18	8	6. 9	86. 26	94. 5	27. 10	26. 42	
M.	19	9	7. 7	101. 34	108. 51	25. 51	24. 38	
Tu.	20	10	8. 1	115. 53	122. 41	23. 5	21. 15	
W.	21	11	8. 51	129. 14	135. 33	19. 11	16. 55	
Th.	22	12	9. 38	141. 40	147. 36	14. 28	11. 54	
F.	23	13	10. 21	153. 23	159. 1	9. 14	6. 29	
Sa.	24	14	11. 3	164. 34	170. 2	3. 42 N	0. 55 N	
Sun.	25	15	11. 44	175. 28	180. 54	1. 52 S	4. 38 S	
M.	26	16	12. 25	186. 20	191. 48	7. 20	9. 57	
Tu.	27	17	13. 8	197. 20	202. 57	12. 28	14. 52	
W.	28	18	13. 52	208. 40	214. 30	17. 6	19. 11	
Th.	29	19	14. 38	220. 28	226. 35	21. 4	22. 44	
F.	30	20	15. 27	232. 50	239. 13	24. 9	25. 19	
Sa.	31	21	16. 18	245. 44	252. 22	26. 13	26. 49	

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Th.	1	14. 47	14. 47	54. 16	54. 16	5207	5207
F.	2	14. 48	14. 49	54. 18	54. 23	5205	5198
Sa.	3	14. 51	14. 54	54. 31	54. 41	5187	5174
Sun.	4	14. 57	15. 1	54. 53	55. 7	5158	5140
M.	5	15. 6	15. 11	55. 24	55. 44	5118	5091
Tu.	6	15. 17	15. 24	56. 6	56. 30	5063	5032
W.	7	15. 31	15. 38	56. 55	57. 21	5000	4967
Th.	8	15. 45	15. 52	57. 48	58. 15	4933	4900
F.	9	16. 0	16. 7	58. 42	59. 7	4866	4835
Sa.	10	16. 13	16. 19	59. 31	59. 53	4806	4779
Sun.	11	16. 24	16. 28	60. 12	60. 27	4757	4739
M.	12	16. 31	16. 33	60. 38	60. 45	4725	4717
Tu.	13	16. 34	16. 34	60. 49	60. 48	4712	4714
W.	14	16. 33	16. 31	60. 44	60. 36	4718	4728
Th.	15	16. 28	16. 24	60. 25	60. 11	4741	4758
F.	16	16. 20	16. 15	59. 55	59. 37	4777	4799
Sa.	17	16. 10	16. 4	59. 18	58. 58	4822	4846
Sun.	18	15. 59	15. 53	58. 38	58. 17	4871	4897
M.	19	15. 47	15. 42	57. 57	57. 37	4922	4947
Tu.	20	15. 37	15. 32	57. 18	56. 59	4971	4995
W.	21	15. 27	15. 22	56. 41	56. 24	5018	5040
Th.	22	15. 18	15. 14	56. 8	55. 53	5060	5080
F.	23	15. 10	15. 6	55. 39	55. 25	5098	5116
Sa.	24	15. 3	15. 0	55. 13	55. 2	5132	5146
Sun.	25	14. 57	14. 54	54. 51	54. 41	5161	5174
M.	26	14. 52	14. 50	54. 33	54. 25	5185	5195
Tu.	27	14. 48	14. 47	54. 19	54. 14	5203	5210
W.	28	14. 46	14. 46	54. 11	54. 10	5214	5215
Th.	29	14. 45	14. 46	54. 9	54. 10	5217	5215
F.	30	14. 46	14. 48	54. 13	54. 18	5211	5205
Sa.	31	14. 50	14. 53	54. 26	54. 36	5194	5181

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		IIP.		VT.		IX.		Midnight.		XVh.		XVIII.		XXIh.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
$\alpha$ Aquilæ.	1	86. 16. 11	84. 59. 50	83. 43. 35	82. 27. 25	81. 11. 20	79. 55. 22	78. 39. 30	77. 23. 45	71. 6. 56	69. 52. 2	68. 37. 19	67. 22. 49				
	2	76. 8. 7	74. 52. 36	73. 37. 14	72. 22. 0	71. 6. 56	69. 52. 2	68. 37. 19	67. 22. 49	61. 13. 48	59. 52. 2	58. 37. 19	57. 22. 49				
	3	66. 8. 31	64. 54. 27	63. 40. 38	62. 27. 5	61. 13. 48	60. 59. 32	60. 45. 15	60. 31. 0	55. 54. 15	54. 40. 0	53. 25. 45	52. 11. 30				
the Sun.	1	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	118. 58. 26	117. 37. 25	116. 16. 22	114. 55. 20				
	2	113. 34. 16	112. 13. 10	110. 52. 2	109. 30. 50	108. 9. 36	106. 48. 18	105. 26. 54	104. 5. 25	97. 16. 26	95. 54. 15	94. 31. 53	93. 9. 22				
	3	102. 43. 51	101. 22. 11	100. 0. 23	98. 38. 28	97. 16. 26	95. 54. 15	94. 31. 53	93. 9. 22	86. 14. 1	84. 50. 20	83. 26. 24	82. 2. 13				
	4	91. 46. 41	90. 23. 49	89. 0. 45	87. 37. 29	86. 14. 1	84. 50. 20	83. 26. 24	82. 2. 13	74. 57. 20	73. 31. 30	72. 5. 22	70. 38. 54				
	5	80. 37. 48	79. 13. 6	77. 48. 7	76. 22. 52	74. 57. 20	73. 31. 30	72. 5. 22	70. 38. 54	63. 21. 37	61. 53. 7	60. 24. 15	58. 55. 1				
	6	69. 12. 8	67. 45. 1	66. 17. 34	64. 49. 46	63. 21. 37	61. 53. 7	60. 24. 15	58. 55. 1	51. 23. 7	49. 51. 33	48. 19. 36	46. 47. 14				
	7	57. 25. 25	55. 55. 25	54. 25. 3	52. 54. 16	51. 23. 7	49. 51. 33	48. 19. 36	46. 47. 14	38. 59. 25	37. 25. 45	35. 51. 30	34. 27. 15				
	8	45. 14. 29	43. 41. 19	42. 7. 46	40. 33. 47	38. 59. 25	37. 25. 45	35. 51. 30	34. 27. 15	32. 12. 45	30. 28. 44	28. 45. 37	27. 3. 28				
Aldebaran.	12	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	60. 59. 32	59. 10. 8	57. 20. 46	55. 31. 27				
	13	53. 42. 15	51. 53. 9	50. 4. 15	48. 15. 33	46. 27. 3	44. 38. 47	42. 50. 51	41. 3. 18	46. 27. 3	44. 38. 47	42. 50. 51	41. 3. 18				
	14	39. 16. 7	37. 29. 18	35. 43. 9	33. 57. 37	32. 12. 45	30. 28. 44	28. 45. 37	27. 3. 28	32. 12. 45	30. 28. 44	28. 45. 37	27. 3. 28				
Pollux.	15	25. 22. 25	23. 37. 18	21. 51. 9	20. 5. 33	18. 58. 13	17. 31. 53	16. 5. 58	15. 3. 18	58. 53. 13	57. 4. 46	55. 16. 36	53. 28. 43				
	16	66. 9. 37	64. 20. 9	62. 30. 55	60. 41. 56	58. 53. 13	57. 4. 46	55. 16. 36	53. 28. 43	44. 33. 53	42. 47. 53	41. 2. 15	39. 16. 58				
	17	51. 41. 7	49. 53. 49	48. 6. 51	46. 20. 12	44. 33. 53	42. 47. 53	41. 2. 15	39. 16. 58	44. 33. 53	42. 47. 53	41. 2. 15	39. 16. 58				

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	17	74.15.36	72.30.6	70.44.56	69.0.3	67.15.30	65.31.15	63.47.18	62.3.39
	18	60.20.19	58.37.17	56.54.32	55.12.6	53.29.58	51.48.7	50.6.34	48.25.19
	19	46.44.21	45.3.41	43.23.17	41.43.10	40.3.20	38.23.46	36.44.29	35.5.28
	20	33.26.43	31.48.13	30.10.0	28.32.2	26.54.20	25.16.54	23.39.44	22.2.50
	21	20.26.12							
Spica $\mu$	21	74.28.13	72.51.35	71.15.10	69.38.59	68.3.1	66.27.15	64.51.42	63.16.22
	22	61.41.14	60.6.17	58.31.32	56.56.58	55.22.35	53.48.23	52.14.24	50.40.34
	23	49.6.56	47.33.28	46.0.10	44.27.3	42.54.7	41.21.21	39.48.45	38.16.20
	24	36.44.4	35.11.58	33.40.3	32.8.18	30.36.44	29.5.20	27.34.8	26.3.7
	25	24.32.17							
Antares.	25	70.14.43	68.43.27	67.12.19	65.41.19	64.10.26	62.39.40	61.9.2	59.38.31
	26	58.8.7	56.37.50	55.7.39	53.37.35	52.7.37	50.37.46	49.8.0	47.38.20
	27	46.8.46	44.39.17	43.9.52	41.40.33	40.11.19	38.42.9	37.13.3	35.44.2
	28	34.15.5	32.46.11	31.17.20	29.48.31	28.19.45			
	29	22.14.43							
$\alpha$ Aquilæ.	28	-	-	-	-	84.9.43	82.53.18	81.37.0	80.20.50
	29	79.4.46	77.48.50	76.33.4	75.17.27	74.1.59	72.46.40	71.31.33	70.16.39
	30	69.1.56	67.47.27	66.33.13	65.19.13	64.5.30			
Fomalhaut.	30	-	-	-	-	87.7.36	85.45.35	84.23.32	83.1.26
	31	81.39.18	80.17.7	78.54.55	77.32.40	76.10.24	74.48.6	73.25.47	72.3.27
	A.1	70.41.5							
The Sun.	31	122.9.57	120.48.24	119.26.44	118.4.57	116.43.2	115.20.59	113.58.46	112.36.25
	A.1	111.13.55							

*DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica $\pi$	1	15.23.53		16.51.16		18.18.45		19.46.22		21.14.6		22.41.56		24.9.52		25.37.53	
	2	27.6.0		28.34.11		30.2.27		31.30.49		32.59.16		34.27.48		35.56.27		37.25.12	
	3	38.54.4		40.23.2		41.52.9		43.21.25		44.50.48		46.20.21		47.50.5		49.19.59	
	4	50.50.4		52.20.20		53.50.48		55.21.29		56.52.23		58.23.30		59.54.52		61.26.30	
	5	62.58.22		64.30.30		66.2.56		67.35.40		69.8.40							
Antares.	5	-		-		-		-		23.16.8		24.49.33		26.23.18		27.57.21	
	6	29.31.44		31.6.27		32.41.31		34.16.56		35.52.41		37.28.49		39.5.19		40.42.12	
	7	42.19.28		43.57.7		45.35.9		47.13.36		48.52.26		50.31.41		52.11.22		53.51.26	
	8	55.31.16		57.12.51		58.54.11		60.35.57		62.18.7		64.0.43		65.43.43		67.27.9	
	9	69.10.59		70.55.14		72.39.54		74.24.57		76.10.24		77.56.14		79.42.26		81.29.1	
The Sun.	10	83.13.58															
	14	-		-		39.9.37		40.52.48		42.35.52		44.18.46		46.1.30		47.44.4	
	15	49.26.27		51.8.38		52.50.35		54.32.19		56.13.50		57.55.5		59.36.5		61.16.50	
	16	62.57.19		64.37.32		66.17.28		67.57.7		69.36.29		71.15.33		72.54.20		74.32.49	
	17	76.11.1		77.48.55		79.26.30		81.3.47		82.40.47		84.17.27		85.53.48		87.29.52	
	18	89.5.37		90.41.5		92.16.15		93.51.8		95.25.42		96.59.58		98.33.57		100.7.38	
	19	101.41.2		103.14.9		104.46.59		106.19.32		107.51.49		109.23.49		110.55.33		112.27.2	
	20	113.58.14		115.29.11		116.59.52		118.30.19		120.0.30							

Stars Names.	Days	Neon. D. M. S.	III <sup>h</sup> . D. M. S.	VII <sup>h</sup> . D. M. S.	IX <sup>h</sup> . D. M. S.	Midnight. D. M. S.	XV <sup>h</sup> . D. M. S.	XVIII <sup>h</sup> . D. M. S.	XXI <sup>h</sup> . D. M. S.
Aldebaran.	18	21.47.2	23.18.46	24.51.23	26.24.47	27.58.52	29.33.35	31.8.41	32.44.10
	19	34.20.1	35.55.53	37.31.50	39.7.52	40.44.0	42.20.3	43.56.4	45.32.2
	20	47.7.56	48.43.44	50.19.25	51.54.59	53.30.26	55.5.45	56.40.55	58.15.57
	21	59.50.50	61.25.34	63.0.9	64.34.35	66.8.51	67.42.57	69.16.54	70.50.40
	22	72.34.16							
Pollux.	22	29.44.2	31.17.54	32.51.41	34.25.21	35.58.56	37.32.24	39.5.46	40.39.0
	23	42.12.7	43.45.6	45.17.56	46.50.40	48.23.15	49.55.42	51.28.2	53.0.13
	24	54.32.17							
	24	17.30.53	19.2.52	20.34.44	22.6.31	23.38.11	25.9.44	26.41.11	28.12.31
Regulus.	25	29.43.45	31.14.52	32.45.52	34.16.45	35.47.31	37.18.9	38.48.41	40.19.6
	26	41.49.24	43.19.36	44.49.42	46.19.41	47.49.34	49.19.21	50.49.3	52.18.39
	27	53.48.10	55.17.35	56.46.56	58.16.12	59.45.23	61.14.29	62.43.32	64.12.30
	28	65.41.25	67.10.16	68.39.4	70.7.50	71.36.33	73.5.14	74.33.53	76.2.31
	29	77.31.7							
	29	23.34.23	25.2.25	26.30.31	27.58.39	29.26.50	30.55.3	32.23.20	33.51.39
Spica ♀	30	35.20.2	36.48.27	38.16.56	39.45.30	41.14.7	42.42.49	44.11.36	45.40.28
	31	47.9.27	48.38.31	50.7.43	51.37.2	53.6.29	54.36.4	56.5.47	57.35.40
	A.1	59.5.42							

CONFIGURATIONS of the SATELLITES of JUPITER  
at Half an Hour past XI o'Clock, at *Night*.

1			2.	○	.3	.1		.4
2			.2.1	○			.3	4
3				○	1.	.2	3.	4.
4			.1	○	2.3.		4.	
5	1●		2.3.	○			4.	
6	2.○	3.		4.○	.1			
7		.3	4.	1.○		.2.		
8	3.○	4.		2.○		.1		
9	4.		.2	1.○			.3	
10	4.			○	1.	.2	3.	
11	.4		.1	○		2.3.		
12		.4		2..3.	○	1.		
13	1.○	3.	.4	.2	○			
14		.3		1.4	○		.2	
15			.3	2.○		.1	.4	
16		.2	1.	○		.3	.4	
17				○	1.	.2	3.	.4
18			.1	○		2.3.		.4
19		2.	3.	○	1.			4.
20		3.		.2.1	○			4.
21	1●		.3	○		.2	4.	
22	2●		.3	○	.1		4.	
23		.2	4.1.	○		.3		
24		4.		○	.2.1		.3	
25	4.		.1	○		2.3.		
26	4.		2.	3.○		1.		
27	.4		.3.	.2.1	○			
28	1●	.4	.3	○		.2		
29		.4	.3	○	.1			
30		2○4	1.	○		.3		
31				○	2○4	.1	.3	

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter --- 2. 21. 24 ● New Moon --- 9. 20. 16 ☽ First Quarter --- 16. 11. 35 ○ Full Moon --- 24. 10. 2	
			Other Phenomena.	
			D. H. M.	
Sun.	1	Easter-Day.	1. - - δ φ ☿, * 8' N.	
M.	2	Easter-Monday.	2. 9. 50 ☽ φ †	
Tu.	3	Eaſt. Tu. R <sup>d</sup> . Bp. of Chich.	2. 14. 7 ☽ σ †	
W.	4	St. Ambrose.	12. 7. 49 <sup>1</sup> / <sub>2</sub> I. of η Ple. * 15 <sup>3</sup> / <sub>4</sub> S ☽ C.	
Th.	5		12. 8. 12 <sup>1</sup> / <sub>2</sub> E. * 14 <sup>1</sup> / <sub>4</sub> S ☽ C.	
F.	6		N. B. Others are occulted.	
Sa.	7		15. 0. 59 ☽ ε II.	
Sun.	8	1 <sup>st</sup> Sunday after Easter.	17. 4. 30 ☽ δ ☿	
M.	9	[Low-Sunday.]	19. 19. 40 ☽ enters 8	
Tu.	10		26. 13. 3 <sup>1</sup> / <sub>2</sub> I. π m, * 5 <sup>1</sup> / <sub>2</sub> N ☽ S. C.	
W.	11	Oxf. and Camb. T. beg.	26. 14. 19 <sup>1</sup> / <sub>2</sub> E. * 6 <sup>1</sup> / <sub>4</sub> S ☽ S. C.	
Th.	12		26. 23. 50 ☽ σ m	
F.	13		27. 3. 47 ☽ α m	
Sa.	14		28. 3. 50 ☽ 43 Ophiuchi.	
Sun.	15	2 <sup>d</sup> Sunday after Easter.	29. - - ♀ 125 8, * 5 <sup>1</sup> / <sub>2</sub> S.	
M.	16	From Easter. in 15 days	29. 16. 28 ☽ φ †	
Tu.	17	[1 ret.]	29. 20. 48 ☽ σ †	
W.	18	Easter Term begins.		
Th.	19	Alphege.		
F.	20			
Sa.	21			
Sun.	22	3 <sup>d</sup> Sunday after Easter.		
M.	23	From Eaſt. in 3 w. 2 ret.		
Tu.	24	[St. George]		
W.	25	St. Mark. Prs. Mary born.		
Th.	26			
F.	27			
Sa.	28			
Sun.	29	4 <sup>th</sup> Sunday after Easter.		
M.	30	From Eaſt. in 1 month		
		[3 ret.]		





Days of the Week.	Days of the Month.	THE S U N's			Equation of Time, <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	0. 11. 33. 44	0. 42. 30. 8	4. 34. 40	3. 57. 4	18, 2
M.	2	0. 12. 32. 48	0. 46. 9. 1	4. 57. 45	3. 39. 2	18, 2
Tu.	3	0. 13. 31. 50	0. 49. 47. 5	5. 20. 45	3. 21. 0	17, 9
W.	4	0. 14. 30. 51	0. 53. 26. 1	5. 43. 39	3. 3. 1	17, 8
Th.	5	0. 15. 29. 50	0. 57. 4. 8	6. 6. 27	2. 45. 3	17, 6
F.	6	0. 16. 28. 47	1. 0. 43. 7	6. 29. 9	2. 27. 7	17, 3
Sa.	7	0. 17. 27. 42	1. 4. 22. 9	6. 51. 45	2. 10. 4	17, 1
Sun.	8	0. 18. 26. 35	1. 8. 2. 3	7. 14. 14	1. 53. 3	16, 9
M.	9	0. 19. 25. 27	1. 11. 41. 9	7. 36. 35	1. 36. 4	16, 6
Tu.	10	0. 20. 24. 16	1. 15. 21. 8	7. 58. 49	1. 19. 8	16, 4
W.	11	0. 21. 23. 4	1. 19. 2. 0	8. 20. 55	1. 3. 4	16, 1
Th.	12	0. 22. 21. 49	1. 22. 42. 4	8. 42. 52	0. 47. 3	15, 7
F.	13	0. 23. 20. 33	1. 26. 23. 1	9. 4. 40	0. 31. 6	15, 5
Sa.	14	0. 24. 19. 14	1. 30. 4. 2	9. 26. 20	0. 16. 1	15, 1
Sun.	15	0. 25. 17. 53	1. 33. 45. 6	9. 47. 59	0. 1. 0	14, 8
M.	16	0. 26. 16. 30	1. 37. 27. 3	10. 9. 10	Sub. 13. 8	14, 5
Tu.	17	0. 27. 15. 4	1. 41. 9. 4	10. 30. 20	0. 28. 3	14, 1
W.	18	0. 28. 13. 36	1. 44. 51. 8	10. 51. 20	0. 42. 4	13, 7
Th.	19	0. 29. 12. 6	1. 48. 34. 6	11. 12. 8	0. 56. 1	13, 3
F.	20	1. 0. 10. 34	1. 52. 17. 8	11. 32. 46	1. 9. 4	13, 0
Sa.	21	1. 1. 8. 59	1. 56. 1. 3	11. 53. 12	1. 22. 4	12, 5
Sun.	22	1. 2. 7. 22	1. 59. 45. 4	12. 13. 27	1. 34. 9	12, 0
M.	23	1. 3. 5. 44	2. 3. 29. 8	12. 33. 29	1. 46. 9	11, 6
Tu.	24	1. 4. 4. 3	2. 7. 14. 7	12. 53. 19	1. 58. 5	11, 2
W.	25	1. 5. 2. 21	2. 11. 0. 1	13. 12. 57	2. 9. 7	10, 6
Th.	26	1. 6. 0. 37	2. 14. 46. 0	13. 32. 22	2. 20. 3	10, 2
F.	27	1. 6. 58. 51	2. 18. 32. 4	13. 51. 33	2. 30. 5	9, 6
Sa.	28	1. 7. 57. 4	2. 22. 19. 3	14. 10. 31	2. 40. 1	9, 1
Sun.	29	1. 8. 55. 15	2. 26. 6. 7	14. 29. 14	2. 49. 2	8, 5
M.	30	1. 9. 53. 25	2. 29. 54. 7	14. 47. 44	2. 57. 7	

Days	Time of ☉'s Semidiam. pass <sup>g</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 4	16. 2. 5	2. 27. 7	0.000108	10. 11. 5
7	1. 4. 5	16. 0. 8	2. 27. 2	0.000876	10. 10. 46
13	1. 4. 7	15. 59. 2	2. 26. 6	0.001610	10. 10. 27
19	1. 5. 1	15. 57. 7	2. 26. 1	0.002309	10. 10. 7
25	1. 5. 5	15. 56. 1	2. 25. 6	0.002992	10. 9. 48

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	18. 27. 46	2	0. 52. 14	2	9. 8. 26 Im.
* 4	12. 56. 47	* 5	14. 10. 2	* 2	11. 7. 56 E.
6	7. 25. 50	9	3. 27. 53	* 9	13. 8. 49 Im.
8	1. 54. 49	12	16. 45. 47	* 9	15. 7. 49 E.
9	20. 23. 53	16	6. 3. 39	16	17. 9. 6 Im.
* 11	14. 52. 52	19	19. 21. 26	16	19. 7. 36 E.
* 13	9. 21. 54	<i>Emerfions.</i>		23	21. 9. 9 Im.
15	3. 50. 51	* 23	10. 57. 23	23	23. 7. 11 E.
16	22. 19. 54	27	0. 15. 7		
18	16. 48. 50	* 30	13. 32. 44		
* 20	11. 17. 48				
<i>Emerfions.</i>				IV. Satellite. Conj.	
22	7. 54. 45			* 8	13. 50 Sup.
24	2. 23. 41			16	21. 12 <sup>1</sup> / <sub>2</sub> Inf.
25	20. 52. 33			25	4. 32 <sup>1</sup> / <sub>2</sub> Sup.
* 27	15. 21. 27				
* 29	9. 50. 16				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.		D. M.	H. M.
	S. D. M.	D. M.	S. D. M.	D. M.			
♿ MERCURY. Sup. 6 16 <sup>d</sup> . 7 <sup>h</sup> .							
1	10. 17. 16	7. 0 S	11. 26. 39	2. 14 S	3. 23 S	23. 12	
4	10. 28. 31	6. 50	0. 2. 3	2. 3	1. 4 S	23. 21	
7	11. 10. 45	6. 23	0. 7. 43	1. 49	1. 24 N	23. 30	
10	11. 24. 8	5. 31	0. 13. 36	1. 29	4. 1	23. 41	
13	0. 8. 48	4. 15	0. 19. 40	1. 5	6. 42	23. 52	
16	0. 24. 50	2. 33	0. 25. 55	0. 38	9. 26	0	
19	1. 12. 9	0. 29 S	1. 2. 17	0. 7 S	12. 10	0. 12	
22	2. 0. 31	1. 45 N	1. 8. 40	0. 25 N	14. 49	0. 25	
25	2. 19. 24	3. 52	1. 14. 58	0. 57	17. 16	0. 38	
28	3. 8. 12	5. 32	1. 21. 1	1. 27	19. 25	0. 50	
30	3. 20. 21	6. 19	1. 24. 51	1. 44	20. 41	0. 58	
♀ VENUS.							
1	3. 21. 23	2. 1 N	1. 20. 26	1. 17 N	19. 7 N	2. 28	
7	4. 1. 8	2. 27	1. 27. 24	1. 37	21. 11	2. 35	
13	4. 10. 53	2. 49	2. 4. 19	1. 56	22. 56	2. 41	
19	4. 20. 38	3. 5	2. 11. 8	2. 13	24. 20	2. 48	
25	5. 0. 23	3. 17	2. 17. 52	2. 28	25. 22	2. 55	
♂ MARS.							
1	10. 24. 34	1. 50 S	11. 14. 4	1. 10 S	7. 21 S	22. 20	
7	10. 28. 22	1. 49	11. 18. 46	1. 9	5. 31	22. 15	
13	11. 2. 11	1. 48	11. 23. 26	1. 9	3. 40	22. 10	
19	11. 5. 59	1. 46	11. 28. 5	1. 8	1. 48 S	22. 5	
25	11. 9. 48	1. 43	0. 2. 43	1. 7	0. 3 N	22. 0	
♃ JUPITER. 8 20 <sup>d</sup> . 20 <sup>h</sup> .							
1	6. 29. 29	1. 14 N	7. 3. 26	1. 30 N	11. 16 S	13. 22	
7	6. 29. 57	1. 14	7. 2. 44	1. 30	11. 1	12. 58	
13	7. 0. 24	1. 14	7. 2. 0	1. 30	10. 46	12. 33	
19	7. 0. 51	1. 14	7. 1. 14	1. 30	10. 30	12. 8	
25	7. 1. 19	1. 13	7. 0. 28	1. 30	10. 15	11. 42	
♄ SATURN.							
1	6. 0. 36	2. 20 N	5. 29. 19	2. 36 N	2. 39 N	11. 17	
7	6. 0. 48	2. 20	5. 28. 52	2. 36	2. 50	10. 54	
13	6. 1. 0	2. 20	5. 28. 27	2. 35	2. 59	10. 30	
19	6. 1. 12	2. 21	5. 28. 4	2. 35	3. 8	10. 7	
25	6. 1. 24	2. 21	5. 27. 44	2. 34	3. 16	9. 43	
♅ GEORGIAN. 8 4 <sup>d</sup> . 4 <sup>h</sup> .							
1	6. 14. 39	0. 39 N	6. 14. 49	0. 42 N	5. 12 S	12. 11	
11	6. 14. 47	0. 39	6. 14. 23	0. 42	5. 2	11. 34	
21	6. 14. 54	0. 39	6. 13. 58	0. 41	4. 53	10. 55	

Days of the Week.	Days of the Month.	THE MOON'S													
		Longitude.				Latitude.									
		Noon.		Midnight.		Noon.		Midnight.							
		S.	D.	M.	S.	S.	D.	M.	S.	D.	M.	S.			
Sun.	1	8.	20.	16.	33	8.	26.	19.	10	3.	59.	42 S	3.	38.	30 S
M.	2	9.	2.	24.	42	9.	8.	33.	42	3.	14.	37	2.	48.	16
Tu.	3	9.	14.	46.	50	9.	21.	4.	42	2.	19.	37	1.	48.	55
W.	4	9.	27.	27.	52	10.	3.	56.	56	1.	16.	24	0.	42.	27 S
Th.	5	10.	40.	32.	22	10.	17.	14.	38	0.	7.	23 S	0.	28.	22 N
F.	6	10.	24.	4.	2	11.	1.	0.	46	1.	4.	18 N	1.	39.	54
Sa.	7	11.	8.	4.	50	11.	15.	16.	2	2.	14.	34	2.	47.	37
Sun.	8	11.	22.	33.	59	11.	29.	58.	2	3.	18.	26	3.	46.	17
M.	9	0.	7.	27.	18	0.	15.	0.	44	4.	10.	33	4.	30.	39
Tu.	10	0.	22.	37.	4	1.	0.	14.	57	4.	46.	4	4.	56.	26
W.	11	1.	7.	52.	55	1.	15.	29.	36	5.	1.	31	5.	1.	15
Th.	12	1.	23.	3.	30	2.	0.	33.	46	4.	55.	40	4.	45.	2
F.	13	2.	7.	59.	3	2.	15.	18.	41	4.	29.	40	4.	10.	3
Sa.	14	2.	22.	32.	1	2.	29.	38.	44	3.	46.	39	3.	20.	2
Sun.	15	3.	6.	38.	41	3.	13.	31.	52	2.	50.	47	2.	19.	30
M.	16	3.	20.	18.	28	3.	26.	58.	47	1.	46.	42	1.	12.	55
Tu.	17	4.	3.	33.	11	4.	10.	2.	9	0.	38.	38 N	0.	4.	20 N
W.	18	4.	16.	26.	9	4.	22.	45.	41	0.	29.	34 S	1.	2.	40 S
Th.	19	4.	29.	1.	17	5.	5.	13.	24	1.	34.	38	2.	5.	10
F.	20	5.	11.	22.	31	5.	17.	29.	4	2.	33.	56	3.	0.	42
Sa.	21	5.	23.	33.	26	5.	29.	35.	57	3.	25.	12	3.	47.	13
Sun.	22	6.	5.	36.	57	6.	11.	36.	39	4.	6.	34	4.	23.	6
M.	23	6.	17.	35.	20	6.	23.	33.	10	4.	36.	40	4.	47.	8
Tu.	24	6.	29.	30.	22	7.	5.	27.	5	4.	54.	26	4.	58.	30
W.	25	7.	11.	23.	30	7.	17.	19.	46	4.	59.	19	4.	56.	53
Th.	26	7.	23.	16.	3	7.	29.	12.	32	4.	51.	12	4.	42.	21
F.	27	8.	5.	9.	29	8.	11.	7.	6	4.	30.	24	4.	15.	27
Sa.	28	8.	17.	5.	42	8.	23.	5.	38	3.	57.	38	3.	37.	6
Sun.	29	8.	29.	7.	14	9.	5.	10.	58	3.	13.	59	2.	48.	34
M.	30	9.	11.	17.	14	9.	17.	26.	31	2.	20.	59	1.	51.	31

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	22	17. 10	259. 5	265. 52	27. 5 S	27. 3 S
M.	2	23	18. 3	272. 41	279. 31	26. 41	25. 59
Tu.	3	24	18. 55	286. 40	293. 6	24. 57	23. 36
W.	4	25	19. 46	299. 48	306. 27	21. 56	19. 59
Th.	5	26	20. 36	313. 2	319. 33	17. 44	15. 14
F.	6	27	21. 26	326. 1	332. 28	12. 30	9. 34
Sa.	7	28	22. 16	338. 54	345. 21	6. 28 S	3. 14 S
Sun.	8	29	23. 7	351. 52	358. 28	0. 5 N	3. 27 N
M.	9	1	0	5. 11	12. 3	6. 48	10. 5
Tu.	10	2	0. 1	19. 6	26. 20	13. 14	16. 11
W.	11	3	0. 59	33. 47	41. 27	18. 54	21. 18
Th.	12	4	2. 0	49. 18	57. 18	23. 19	24. 56
F.	13	5	3. 3	65. 25	73. 32	26. 6	26. 48
Sa.	14	6	4. 7	81. 38	89. 36	27. 2	26. 48
Sun.	15	7	5. 8	97. 24	104. 58	26. 9	25. 5
M.	16	8	6. 5	112. 16	119. 17	23. 41	21. 59
Tu.	17	9	6. 57	126. 2	132. 30	20. 1	17. 49
W.	18	10	7. 44	138. 45	144. 46	15. 27	12. 57
Th.	19	11	8. 28	150. 36	156. 17	10. 21	7. 40
F.	20	12	9. 10	161. 50	167. 19	4. 56 N	2. 11 N
Sa.	21	13	9. 51	172. 44	178. 7	0. 35 S	3. 19 S
Sun.	22	14	10. 32	183. 31	188. 56	6. 0	8. 38
M.	23	15	11. 13	194. 25	199. 59	11. 10	13. 36
Tu.	24	16	11. 57	205. 38	211. 24	15. 54	18. 2
W.	25	17	12. 42	217. 19	223. 21	20. 0	21. 46
Th.	26	18	13. 30	229. 33	235. 51	23. 18	24. 36
F.	27	19	14. 20	242. 20	248. 54	25. 37	26. 21
Sa.	28	20	15. 12	255. 33	262. 16	26. 47	26. 54
Sun.	29	21	16. 4	269. 1	275. 46	26. 42	26. 10
M.	30	22	16. 55	282. 30	289. 10	25. 19	24. 10

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sun.	1	14. 56	15. 0	54. 48	55. 2	5165	5146
M.	2	15. 4	15. 10	55. 19	55. 38	5124	5099
Tu.	3	15. 15	15. 22	55. 59	56. 23	5072	5041
W.	4	15. 29	15. 30	56. 48	57. 15	5009	4975
Th.	5	15. 44	15. 52	57. 43	58. 12	4940	4903
F.	6	15. 59	16. 7	58. 41	59. 9	4867	4833
Sa.	7	16. 15	16. 22	59. 37	60. 3	4799	4768
Sun.	8	16. 28	16. 34	60. 26	60. 46	4740	4716
M.	9	16. 38	16. 41	61. 2	61. 14	4697	4683
Tu.	10	16. 43	16. 44	61. 22	61. 24	4673	4671
W.	11	16. 43	16. 41	61. 24	61. 15	4673	4682
Th.	12	16. 38	16. 34	61. 4	60. 49	4694	4712
F.	13	16. 29	16. 23	60. 31	60. 9	4734	4760
Sa.	14	16. 17	16. 10	59. 46	59. 21	4788	4819
Sun.	15	16. 3	15. 56	58. 55	58. 28	4850	4883
M.	16	15. 49	15. 42	58. 2	57. 37	4916	4947
Tu.	17	15. 35	15. 29	57. 13	56. 49	4977	5008
W.	18	15. 23	15. 17	56. 27	56. 7	5036	5062
Th.	19	15. 12	15. 8	55. 48	55. 31	5086	5108
F.	20	15. 3	15. 0	55. 15	55. 2	5129	5146
Sa.	21	14. 56	14. 53	54. 50	54. 39	5162	5177
Sun.	22	14. 51	14. 49	54. 30	54. 22	5189	5199
M.	23	14. 47	14. 46	54. 16	54. 11	5207	5214
Tu.	24	14. 45	14. 44	54. 8	54. 5	5218	5222
W.	25	14. 44	14. 44	54. 4	54. 4	5223	5223
Th.	26	14. 45	14. 46	54. 6	54. 10	5221	5215
F.	27	14. 47	14. 49	54. 15	54. 21	5209	5201
Sa.	28	14. 51	14. 53	54. 29	54. 38	5190	5178
Sun.	29	14. 56	15. 0	54. 50	55. 4	5162	5144
M.	30	15. 5	15. 9	55. 20	55. 37	5123	5100

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III.		VI.		IX.		Midnight.		XV.		XVIII.		XXI.	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
Fomalhaut.	1	70.41.7		69.18.44		67.56.21		66.33.59		65.11.36		63.49.14		62.26.56		61.4.41	
	2	59.42.29		58.20.20		56.58.17		55.36.22		54.14.36		52.53.0		51.31.35		50.10.24	
	3	48.49.27															
The Sun.	1	111.13.56		109.51.16		108.28.26		107.5.24		105.42.10		104.18.44		102.55.5		101.31.13	
	2	100.7.7		98.42.47		97.18.13		95.53.22		94.28.17		93.2.55		91.57.16		90.11.18	
	3	88.45.4		87.18.30		85.51.37		84.24.24		82.56.51		81.28.58		80.0.44		78.32.8	
	4	77.3.11		75.33.51		74.4.7		72.34.0		71.3.30		69.32.36		68.1.17		66.29.34	
	5	64.57.27		63.24.55		61.51.57		60.18.34		58.44.45		57.10.30		55.35.50		54.0.44	
	6	52.25.12		50.49.14		49.12.51		47.36.3		45.58.52		44.21.14		42.43.15		41.4.51	
	7	39.26.5															
Pollux.	11	72.13.27		70.19.59		68.26.39		66.33.27		64.40.25		62.47.33		60.54.54		59.2.28	
	12	57.10.15		55.18.16		53.26.35		51.35.17		49.44.4		47.53.18		46.2.52		44.12.48	
	13	42.23.8															
Regulus.	13	79.7.53		77.17.42		75.27.53		73.38.25		71.49.19		70.0.35		68.12.13		66.24.15	
	14	64.36.39		62.49.27		61.2.39		59.16.14		57.30.14		55.44.38		53.59.25		52.14.37	
	15	50.30.13		48.46.14		47.2.38		45.19.28		43.36.41		41.54.18		40.12.20		38.30.45	
	16	36.49.34		35.8.46		33.28.21		31.48.19		30.8.40		28.29.24		26.50.31		25.12.0	
	17	23.33.53															

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica $\pi$	17	77.35.59	75.58.0	74.20.21	72.43.1	71.14.30	69.29.19	67.52.55	66.16.50	67.14.30	65.44.10	64.13.57	62.43.50	67.52.55	65.44.10	64.13.57	62.43.50
	18	64.41.2	63.5.31	61.30.17	59.55.19	58.14.7	56.46.13	55.12.1	53.38.6	58.20.38	56.46.13	55.12.1	53.38.6	55.12.1	53.38.6	51.14.53	49.4.27
	19	52.4.25	50.30.58	48.57.44	47.24.44	46.18.25	44.49.15	43.20.8	41.51.4	45.51.57	44.19.24	42.47.2	41.14.53	42.47.2	40.22.3	38.53.4	37.24.8
	20	39.42.56	38.11.10	36.39.36	35.8.12	34.26.21	32.57.31	31.28.42	30.35.7	33.37.0	32.5.58	30.35.7	29.4.27	30.35.7	29.4.27	27.33.57	25.16.58
	21	27.33.57	25.16.58	23.46.10	21.46.10	20.15.30	18.44.56	17.14.30	15.44.56	27.33.57	25.16.58	23.46.10	21.46.10	20.15.30	18.44.56	17.14.30	15.44.56
Antares.	22	61.13.50	59.43.56	58.14.7	56.44.23	55.14.45	53.45.11	52.15.41	50.46.16	55.14.45	53.45.11	52.15.41	50.46.16	52.15.41	50.46.16	48.14.53	46.14.53
	23	49.16.55	47.47.38	46.18.25	44.49.15	43.20.8	41.51.4	40.22.3	38.53.4	43.20.8	41.51.4	40.22.3	38.53.4	40.22.3	38.53.4	36.39.36	34.26.21
	24	37.24.8	35.55.14	34.26.21	32.57.31	31.28.42	30.35.7	29.4.27	27.33.57	31.28.42	30.35.7	29.4.27	27.33.57	29.4.27	27.33.57	25.16.58	23.46.10
	25	81.44.10	80.27.44	79.11.24	77.55.12	76.39.6	75.23.8	74.7.20	72.51.42	86.50.42	85.33.58	84.17.17	83.0.41	84.17.17	82.51.42	80.27.44	78.11.24
	26	71.36.14	70.20.58	69.5.55	67.51.5	66.36.30	65.23.8	64.7.20	62.51.42	76.39.6	75.23.8	74.7.20	72.51.42	74.7.20	72.51.42	70.20.58	68.5.55
Fomalhaut.	27	84.36.11	83.14.9	81.52.7	80.30.4	79.8.1	77.45.58	76.23.55	75.1.53	90.4.7	88.42.10	87.20.12	85.58.12	87.20.12	85.58.12	83.14.9	81.52.7
	28	73.39.51	72.17.50	70.55.52	69.33.56	68.12.3	66.50.13	65.28.28	64.6.47	79.8.1	77.45.58	76.23.55	75.1.53	76.23.55	75.1.53	73.39.51	72.17.50
	29	62.45.12	61.23.41	60.2.18	58.41.4	57.19.59	55.59.5	54.38.22	53.17.53	68.12.3	66.50.13	65.28.28	64.6.47	65.28.28	64.6.47	62.45.12	61.23.41
	30	51.57.38	50.35.16	49.14.53	47.52.11	46.30.17	45.7.20	44.4.27	43.1.53	57.19.59	55.59.5	54.38.22	53.17.53	54.38.22	53.17.53	51.57.38	50.35.16
	M.1	71.31.43	70.3.34	68.35.16	67.6.49	65.38.13	64.9.31	62.40.41	61.11.45	65.38.13	64.9.31	62.40.41	61.11.45	62.40.41	61.11.45	59.42.42	58.14.53
The Sun.	29	118.34.34	117.10.4	115.45.21	114.20.23	112.55.12	111.29.46	110.4.4	108.38.5	112.55.12	111.29.46	110.4.4	108.38.5	110.4.4	108.38.5	106.14.53	104.14.53
	M.1	107.11.51	105.45.21	104.20.23	102.55.12	101.29.46	100.4.4	98.38.5	97.11.45	102.55.12	101.29.46	100.4.4	98.38.5	100.4.4	98.38.5	96.14.53	94.14.53



# *DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	13. 12. 47	14. 43. 6	16. 13. 37	17. 44. 19	19. 15. 12	20. 46. 17	22. 17. 36	23. 49. 7	25. 20. 52	26. 52. 50	28. 25. 4	29. 57. 33	31. 30. 18	33. 3. 19	34. 36. 38	36. 10. 14
	2	25. 20. 52	26. 52. 50	28. 25. 4	29. 57. 33	31. 30. 18	33. 3. 19	34. 36. 38	36. 10. 14	37. 44. 8	39. 18. 21	40. 52. 54	42. 27. 47	44. 3. 0	45. 38. 34	47. 14. 29	48. 50. 46
	3	37. 44. 8	39. 18. 21	40. 52. 54	42. 27. 47	44. 3. 0	45. 38. 34	47. 14. 29	48. 50. 46	50. 27. 25	52. 4. 27	53. 41. 53	55. 19. 41	56. 57. 53	58. 36. 30	60. 15. 32	61. 55. 0
	4	50. 27. 25	52. 4. 27	53. 41. 53	55. 19. 41	56. 57. 53	58. 36. 30	60. 15. 32	61. 55. 0	63. 34. 52	65. 15. 10	66. 55. 54	68. 37. 5	70. 18. 42	72. 0. 46	73. 43. 17	75. 26. 14
	5	63. 34. 52	65. 15. 10	66. 55. 54	68. 37. 5	70. 18. 42	72. 0. 46	73. 43. 17	75. 26. 14	77. 9. 39	78. 53. 31	80. 37. 49	82. 22. 35	84. 7. 47	85. 53. 26	87. 39. 31	89. 26. 3
	6	77. 9. 39	78. 53. 31	80. 37. 49	82. 22. 35	84. 7. 47	85. 53. 26	87. 39. 31	89. 26. 3	91. 13. 0	93. 0. 23	94. 48. 11	96. 36. 25	98. 25. 3	100. 14. 30	101. 54. 2	103. 44. 17
	7	91. 13. 0	93. 0. 23	94. 48. 11	96. 36. 25	98. 25. 3	100. 14. 30	101. 54. 2	103. 44. 17	105. 15. 46	106. 44. 17	108. 12. 30	109. 40. 26	110. 56. 1	112. 22. 2	113. 56. 1	115. 47. 20
e Aquilæ.	7	-	-	-	-	-	-	-	-	51. 14. 30	52. 38. 12	54. 3. 11	55. 29. 29	57. 1. 14	58. 42. 25	59. 56. 41	61. 32. 17
	8	56. 57. 5	58. 25. 46	59. 55. 29	61. 26. 9	62. 57. 47	64. 28. 36	65. 59. 25	67. 30. 14	69. 1. 14	70. 32. 3	71. 43. 14	72. 54. 48	74. 5. 2	75. 16. 55	76. 27. 26	77. 38. 36
	12	-	-	-	-	-	-	-	-	37. 57. 50	39. 41. 3	41. 24. 2	43. 6. 44	44. 17. 36	45. 28. 69	46. 39. 20	47. 50. 29
	13	44. 49. 12	46. 31. 22	48. 13. 14	49. 54. 48	51. 36. 2	53. 16. 55	54. 57. 26	56. 37. 36	58. 18. 42	59. 59. 25	61. 39. 36	63. 19. 46	64. 59. 54	66. 39. 49	68. 19. 59	69. 40. 29
	14	58. 17. 25	59. 56. 51	61. 35. 55	63. 14. 36	64. 53. 54	66. 33. 49	68. 13. 59	69. 44. 29	71. 24. 14	72. 4. 35	73. 14. 46	74. 25. 7	75. 35. 18	76. 45. 29	77. 55. 39	78. 65. 49
	15	71. 22. 14	72. 58. 35	74. 34. 33	76. 10. 7	77. 45. 18	79. 20. 5	80. 54. 29	82. 28. 30	84. 2. 8	85. 35. 24	86. 45. 35	87. 55. 46	89. 5. 57	90. 16. 14	91. 26. 25	92. 36. 36
	16	84. 2. 8	85. 35. 24	87. 8. 18	88. 40. 50	90. 13. 0	91. 24. 47	92. 35. 58	93. 46. 9	95. 7. 19	96. 18. 30	97. 28. 41	98. 38. 52	99. 49. 3	100. 59. 14	101. 69. 25	102. 79. 36
The Sun.	17	96. 18. 5	97. 48. 30	99. 18. 36	100. 48. 22	102. 17. 49	103. 46. 50	105. 15. 46	106. 44. 17	108. 12. 30	109. 40. 26	110. 56. 1	112. 22. 2	113. 56. 1	115. 47. 20	116. 58. 31	118. 9. 41
	18	108. 12. 30	109. 40. 26	111. 8. 5	112. 35. 29	114. 2. 35	115. 29. 26	116. 56. 1	118. 22. 2	120. 3. 46	121. 14. 57	122. 26. 8	123. 37. 19	124. 48. 30	125. 59. 41	126. 70. 52	127. 81. 63
	19	119. 48. 26	120. 3. 46	121. 14. 57	122. 26. 8	123. 37. 19	124. 48. 30	125. 59. 41	126. 70. 52	127. 81. 63	128. 92. 74	129. 103. 85	130. 114. 96	131. 125. 107	132. 136. 118	133. 147. 129	134. 158. 140
Aldebaran.	16	-	-	-	-	-	-	-	-	50. 18. 29	51. 55. 28	53. 32. 12	55. 8. 41	56. 49. 52	58. 26. 16	59. 52. 30	61. 28. 44
	17	56. 44. 56	58. 20. 56	59. 56. 41	61. 32. 17	63. 7. 26	64. 42. 25	65. 17. 36	66. 32. 47	67. 47. 58	68. 63. 9	69. 78. 20	70. 93. 31	71. 108. 42	72. 123. 53	73. 139. 4	74. 154. 15

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	18	69.25.54	70.59.54	40.50.36	29.43.33	43.55.41	74. 7.11	43.55.41	75.40.28	47. 0. 5	77.13.32	47. 0. 5	78.46.22	48.32. 2	80.18.59	50. 3.49	
	19	81.51.23		53. 6.56	54.38.16	56. 9.28		56. 9.28		57.40.31		59.11.25	60.42.12		62.12.51		
	20	39.17.48															
	21	51.35.27															
	22	63.43.22															
Pollux.	21	26.42.31	28.13. 5	28.13. 5	29.43.33	31.13.55		31.13.55	32.44.11	34.14.21	35.44.26	37.14.24	38.44.26	39.14.24	40.14.24	41.14.24	
	22	38.44.17	40.14. 4	40.14. 4	41.43.46	43.13.23		43.13.23	44.42.55	46.12.23	47.41.47	49.11. 8	50.41.47	51.41.47	52.41.47	53.41.47	
	23	50.40.24	52. 9.36	52. 9.36	53.38.44	55. 7.50		55. 7.50	56.36.52	58. 5.52	59.34.49	61. 3.45	62.34.49	63.34.49	64.34.49	65.34.49	
	24	62.32.37	64. 1.28	64. 1.28	65.30.16	66.59. 3		66.59. 3	68.27.48	69.56.32	71.25.15	72.53.56	73.25.15	74.25.15	75.25.15	76.25.15	
	25	74.22.37															
Regulus.	25	20.26.37	21.54.38	21.54.38	23.22.42	24.50.51		24.50.51	26.19. 3	27.47.19	29.15.38	30.44. 0	31.15.38	32.15.38	33.15.38	34.15.38	
	26	32.12.25	33.40.52	33.40.52	35. 9.22	36.37.57		36.37.57	38. 6.34	39.35.14	41. 3.58	42.32.46	43.35.14	44.35.14	45.35.14	46.35.14	
	27	44. 1.38	45.30.33	45.30.33	46.59.32	48.28.36		48.28.36	49.57.45	51.26.59	52.56.18	54.25.43	55.56.18	56.56.18	57.56.18	58.56.18	
	28	55.55.15	57.24.52	57.24.52	58.54.36	60.24.27		60.24.27	61.54.25	63.24.30	64.54.44	66.25. 6	67.54.44	68.54.44	69.54.44	70.54.44	
	29	67.55.37															
Spica $\pi$	29	24. 4. 4	23.34.50	23.34.50	25. 5.46	26.36.53		26.36.53	28. 8.10	29.30.38	31.11.17	32.43. 7	33.11.17	34.11.17	35.11.17	36.11.17	
	30	34.15. 9	35.47.21	35.47.21	37.19.47	38.52.26		38.52.26	40.25.18	41.58.25	43.31.48	45. 5.27	46.31.48	47.31.48	48.31.48	49.31.48	
	M.1	46.39.22															
Antares.																	

CONFIGURATIONS of the SATELLITES of JUPITER  
at XI o'Clock at *Night*.

1			1.	○	2.	.4	
2	3●		2.	○	1.		.4
3			.2 .1	○			.4
4		.3	3.	○	1.	.2	4.
5	1.○		.3	○	2.		4.
6			2.	1.	○	.3	4.
7	2.○			○	.1	4.	.3
8			1.	○	4.	2.	1.
9			4.	2.	○	3.	.1
10		4.	3.	.2 .1	○		
11		4.	.3	○	1.	.2	
12	4.		.3	.1	○	2.	
13	.4		2.	○	.3		1●
14	.4			.2	○	.1	.3
15		.4	1.	○	2.	3.	
16			.4	2.	○	.1	
17			.2 .1	○		.4	
18		1.		○	1.	.2	.4
19		.3	.1	○	2.		.4
20		2.		○	1.	.3	.4
21			.3	○	.1	.3	4.
22			1.	○		.2	3.
23			2.	○	.1	3.	4.
24			.2 .1 .3	○		4.	
25		3.	4.	○	.2	1.	
26		.3	.1	○	2.		
27	4.		2.	○	1.		3.○
28	4.		.2	○		.3	1.○
29	.4		1.	○		.2	3.
30	.4			○	.1	3.	2●

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			☾ <i>Last Quarter</i> ---- 2. 11. 7.
			● <i>New Moon</i> ---- 9. 4. 2
			☽ <i>First Quarter</i> --- 15. 23. 19
			☾ <i>Full Moon</i> --- 24. 1. 51
			☾ <i>Last Quarter</i> --- 31. 20. 55
			Other Phenomena.
			D. H. M.
			3. 20. 8 ☽ 0 $\infty$
			11. 9. 55 ☽ 125 8
			12. 8. 44 ☽ ♀
			12. 9. 49 ☽ $\varepsilon$ II
			12. - - ♀ $\varepsilon$ II, * 51 $\frac{1}{2}$ S.
			13. - - ♂ $\zeta$ *, * 48 $\frac{1}{2}$ N.
			14. 11. 43 ☽ ♂ $\infty$
			20. 20. 9 ☾ enters II
			23. 20. 2 ☽ $\pi$ m
			24. 5. 48 ☽ $\sigma$ m
			24. 9. 44 ☽ $\alpha$ m
			25. 9. 41 ☽ 43 Ophiuchi.
			26. - - ♀ $\kappa$ II, * 17 $\frac{1}{2}$ N.
			26. 14. 36 ☽ $\lambda$ †
			27. - - ♂ Stationary.
			27. 2. 31 ☽ $\sigma$ †
			29. - - ♀ Stationary.
			31. 2. 53 ☽ 0 $\infty$
Tu.	1	St. Philip and St. James.	
W.	2		
Th.	3	Invention of the Cross.	
F.	4		
Sa.	5	-----[ante P. L.	
Sun.	6	5th S. aft. E. Ro. S. J. Evan.	
M.	7	Duchefs of York b. From	
Tu.	8	[East. in 5 w. 4 ret.	
W.	9		
Th.	10	Ascen. Day. Holy Thurs.	
F.	11	On mor. of Ascen. 5 ret.	
Sa.	12		
Sun.	13	Sunday after Ascension.	
M.	14	Easter Term ends.	
Tu.	15		
W.	16		
Th.	17	Oxford Term ends.	
F.	18		
Sa.	19	Q. Charlotte b. Dunstan	
Sun.	20	Whit-Sunday.	
M.	21	Whit-Monday.	
Tu.	22	Whit-Tu. Prs. Elizab. b.	
W.	23		
Th.	24	Camb. Term div. n.	
F.	25		
Sa.	26	Aug. 1st Abp. Cant.	
Sun.	27	Trinity Sunday. Ven. Bede.	
M.	28	On mor. of H. T. 1 ret.	
Tu.	29	K. Charles. II. restored.	
W.	30	Oxford Term begins.	
Th.	31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. Sub.	Diff.
		Longitude.	Rt. Ascen. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	1. 10. 51. 33	2. 33. 43. 2	15. 5. 59	3. 5. 7	7, 5
W.	2	1. 11. 49. 40	2. 37. 32. 3	15. 24. 0	3. 13. 2	6, 9
Th.	3	1. 12. 47. 46	2. 41. 22. 0	15. 41. 45	3. 20. 1	6, 3
F.	4	1. 13. 45. 50	2. 45. 12. 2	15. 59. 15	3. 26. 4	5, 7
Sa.	5	1. 14. 43. 53	2. 49. 3. 1	16. 16. 29	3. 32. 1	5, 1
Sun.	6	1. 15. 41. 55	2. 52. 54. 5	16. 33. 27	3. 37. 2	4, 6
M.	7	1. 16. 39. 55	2. 56. 46. 5	16. 50. 9	3. 41. 8	3, 9
Tu.	8	1. 17. 37. 54	3. 0. 39. 0	17. 6. 34	3. 45. 7	3, 4
W.	9	1. 18. 35. 52	3. 4. 32. 2	17. 22. 42	3. 49. 1	2, 8
Th.	10	1. 19. 33. 48	3. 8. 25. 9	17. 38. 33	3. 51. 9	2, 3
F.	11	1. 20. 31. 42	3. 12. 20. 2	17. 54. 6	3. 54. 2	1, 7
Sa.	12	1. 21. 29. 35	3. 16. 15. 1	18. 9. 21	3. 55. 9	1, 1
Sun.	13	1. 22. 27. 27	3. 20. 10. 5	18. 24. 17	3. 57. 0	0, 5
M.	14	1. 23. 25. 16	3. 24. 6. 5	18. 38. 55	3. 57. 5	0, 0
Tu.	15	1. 24. 23. 4	3. 28. 3. 1	18. 53. 15	3. 57. 5	0, 5
W.	16	1. 25. 20. 50	3. 32. 0. 2	19. 7. 15	3. 57. 0	1, 1
Th.	17	1. 26. 18. 34	3. 35. 57. 8	19. 20. 55	3. 55. 9	1, 6
F.	18	1. 27. 16. 17	3. 39. 56. 0	19. 34. 16	3. 54. 3	2, 2
Sa.	19	1. 28. 13. 58	3. 43. 54. 8	19. 47. 17	3. 52. 1	2, 7
Sun.	20	1. 29. 11. 37	3. 47. 54. 0	19. 59. 58	3. 49. 4	3, 2
M.	21	2. 0. 9. 15	3. 51. 53. 8	20. 12. 18	3. 46. 2	3, 8
Tu.	22	2. 1. 6. 52	3. 55. 54. 1	20. 24. 18	3. 42. 4	4, 2
W.	23	2. 2. 4. 26	3. 59. 54. 9	20. 35. 57	3. 38. 2	4, 8
Th.	24	2. 3. 2. 0	4. 3. 56. 3	20. 47. 14	3. 33. 4	5, 3
F.	25	2. 3. 59. 33	4. 7. 58. 1	20. 58. 11	3. 28. 1	5, 8
Sa.	26	2. 4. 57. 4	4. 12. 0. 5	21. 8. 45	3. 22. 3	6, 3
Sun.	27	2. 5. 54. 35	4. 16. 3. 4	21. 18. 58	3. 16. 0	6, 8
M.	28	2. 6. 52. 5	4. 20. 6. 8	21. 28. 49	3. 9. 2	7, 3
Tu.	29	2. 7. 49. 34	4. 24. 10. 6	21. 38. 18	3. 1. 9	7, 7
W.	30	2. 8. 47. 2	4. 28. 14. 9	21. 47. 24	2. 54. 2	8, 4
Th.	31	2. 9. 44. 30	4. 32. 19. 7	21. 56. 8	2. 46. 0	

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5. 9	15. 54. 7	2. 25. 3	0.003663	10. 9. 29
7	1. 6. 4	15. 53. 3	2. 25. 0	0.004299	10. 9. 10
13	1. 6. 9	15. 52. 1	2. 24. 6	0.004867	10. 8. 51
19	1. 7. 4	15. 50. 9	2. 24. 3	0.005367	10. 8. 32
25	1. 7. 8	15. 49. 9	2. 23. 9	0.005824	10. 8. 13

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	4. 19. 8	4	2. 50. 14	1	1. 8. 54 Im.
2	22. 47. 52	7	16. 7. 43	1	3. 6. 29 E.
4	17. 16. 42	11	5. 25. 9	8	5. 8. 30 Im.
* 6	11. 45. 25	14	18. 42. 30	8	7. 5. 40 E.
8	6. 14. 10	18	7. 59. 51	*15	9. 7. 29 Im.
10	0. 42. 55	21	21. 17. 7	*15	11. 4. 15 E.
11	19. 11. 34	*25	10. 34. 23	*22	13. 6. 3 Im.
*13	13. 40. 15	28	23. 51. 33	22	15. 2. 28 E.
15	8. 8. 52			29	17. 4. 14 Im.
17	2. 37. 39			29	19. 0. 18 E.
18	21. 6. 3				
20	15. 34. 39			IV. Satellite. Conj.	
*22	10. 3. 9				
24	4. 31. 42			* 3	11. 17 Inf.
25	23. 0. 10			11	18. 22 Sup.
27	17. 28. 40			20	1. 50 Inf.
*29	11. 57. 5			*28	9. 10 Sup.
31	6. 25. 33				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S.D.M.	D.M.	S.D.M.	D.M.	D.M.	H.M.	
♄ Gr. Elong. 15 <sup>d</sup> . <i>MERCURY</i> .							
1	3.26.16	6.35 N	1.26.43	1.52 N	21.16 N	1. 2	
4	4.13. 8	6.59	2. 1.56	2.11	22.43	1.12	
7	4.28.35	6.50	2. 6.38	2.24	23.48	1.21	
10	5.12.38	6.16	2.10.46	2.28	24.32	1.27	
13	5.25.22	5.25	2.14.18	2.25	24.56	1.30	
16	6. 7. 0	4.25	2.17.13	2.13	25. 3	1.31	
19	6.17.41	3.20	2.19.30	1.52	24.54	1.30	
22	6.27.38	2.13	2.21. 5	1.22	24.32	1.25	
25	7. 7. 0	1. 6	2.21.58	0.45	23.58	1.17	
28	7.15.55	0. 1 N	2.22. 9	0. 1 N	23.15	1. 6	
31	7.24.31	1. 2 S	2.21.40	0.49 S	22.23	0.51	
♀ Gr. Elong. 26 <sup>d</sup> . <i>VENUS</i> .							
1	5.10. 9	3.23 N	2.24.27	2.40 N	26. 1 N	3. 2	
7	5.19.53	3.23	3. 0.55	2.49	26.17	3. 7	
13	5.29.37	3.17	3. 7.15	2.54	26.10	3.12	
19	6. 9.19	3. 5	3.13.23	2.54	25.41	3.16	
25	6.19. 0	2.48	3.19.18	2.49	24.52	3.17	
♂ <i>MARS</i> .							
1	11.13.36	1.40 S	0. 7.19	1. 6 S	1.54 N	21.54	
7	11.17.23	1.37	0.11.56	1. 4	3.44	21.48	
13	11.21.10	1.33	0.16.31	1. 2	5.32	21.41	
19	11.24.56	1.29	0.21. 3	1. 0	7.18	21.34	
25	11.28.41	1.24	0.25.34	0. 58	9. 0	21.27	
♃ <i>JUPITER</i> .							
1	7. 1.46	1.13 N	6.29.43	1.29 N	9.59 S	11.17	
7	7. 2.13	1.13	6.28.59	1.29	9.45	10.51	
13	7. 2.41	1.13	6.28.19	1.28	9.31	10.25	
19	7. 3. 8	1.12	6.27.42	1.27	9.19	9.59	
25	7. 3.35	1.12	6.27.10	1.25	9. 9	9.33	
♄ <i>SATURN</i> .							
1	6. 1.37	2.21 N	5.27.25	2.33 N	3.22 N	9.19	
7	6. 1.49	2.21	5.27.11	2.32	3.27	8.55	
13	6. 2. 1	2.21	5.26.59	2.31	3.30	8.31	
19	6. 2.13	2.21	5.26.51	2.30	3.32	8. 7	
25	6. 2.25	2.22	5.26.47	2.29	3.33	7.43	
♅ <i>GEORGIAN</i> .							
1	6.15. 2	0.39 N	6.13.35	0.41 N	4.44 S	10.16	
11	6.15.10	0.39	6.13.14	0.41	4.36	9.36	
21	6.15.18	0.39	6.12.58	0.41	4.30	8.55	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Tu.	1	9. 23. 39. 24	9. 29. 56. 27	1. 20. 24 S	0. 47. 57 S
W.	2	10. 6. 18. 12	10. 12. 45. 12	0. 14. 27 S	0. 19. 39 N
Th.	3	10. 19. 18. 0	10. 25. 57. 4	0. 54. 1 N	1. 28. 12
F.	4	11. 2. 42. 52	11. 9. 35. 40	2. 1. 43	2. 34. 1
Sa.	5	11. 16. 35. 40	11. 23. 42. 52	3. 4. 33	3. 32. 44
Sun.	6	0. 0. 57. 5	0. 8. 17. 55	3. 57. 56	4. 19. 36
M.	7	0. 15. 44. 44	0. 23. 16. 40	4. 37. 9	4. 50. 6
Tu.	8	1. 0. 52. 34	1. 8. 31. 11	4. 58. 4	5. 0. 45
W.	9	1. 16. 11. 6	1. 23. 50. 52	4. 58. 2	4. 49. 59
Th.	10	2. 1. 28. 58	2. 9. 4. 0	4. 36. 45	4. 18. 42
F.	11	2. 16. 34. 45	2. 24. 0. 8	3. 56. 18	3. 30. 6
Sa.	12	3. 1. 19. 19	3. 8. 31. 40	3. 0. 45	2. 28. 55
Sun.	13	3. 15. 36. 51	3. 22. 34. 43	1. 55. 13	1. 20. 20
M.	14	3. 29. 25. 17	4. 6. 8. 48	0. 44. 52 N	0. 9. 19 N
Tu.	15	4. 12. 45. 36	4. 19. 16. 6	0. 25. 46 S	0. 59. 58 S
W.	16	4. 25. 40. 50	5. 2. 0. 20	1. 32. 55	2. 4. 15
Th.	17	5. 8. 15. 12	5. 14. 26. 0	2. 33. 41	3. 0. 59
F.	18	5. 20. 33. 18	5. 26. 37. 38	3. 25. 53	3. 48. 15
Sa.	19	6. 2. 39. 33	6. 8. 39. 30	4. 7. 53	4. 24. 39
Sun.	20	6. 14. 37. 57	6. 20. 35. 17	4. 38. 26	4. 49. 7
M.	21	6. 26. 31. 53	7. 2. 28. 2	4. 56. 39	5. 0. 57
Tu.	22	7. 8. 24. 4	7. 14. 20. 11	5. 1. 59	4. 59. 45
W.	23	7. 20. 16. 39	7. 26. 13. 37	4. 54. 15	4. 45. 33
Th.	24	8. 2. 11. 18	8. 8. 9. 52	4. 33. 41	4. 18. 46
F.	25	8. 14. 9. 30	8. 20. 10. 20	4. 0. 57	3. 40. 20
Sa.	26	8. 26. 12. 38	9. 2. 16. 33	3. 17. 7	2. 51. 33
Sun.	27	9. 8. 22. 22	9. 14. 30. 19	2. 23. 50	1. 54. 15
M.	28	9. 20. 40. 44	9. 26. 53. 58	1. 23. 5	0. 50. 40 S
Tu.	29	10. 3. 10. 23	10. 9. 30. 22	0. 17. 19 S	0. 16. 37 N
W.	30	10. 15. 54. 22	10. 22. 22. 47	0. 50. 43 N	1. 24. 34
Th.	31	10. 28. 56. 4	11. 5. 34. 35	1. 57. 46	2. 29. 48



		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Tu.	1	23	17. 45	295. 46	302. 18	22. 43 S	20. 58 S
W.	2	24	18. 34	308. 45	315. 8	18. 57	16. 41
Th.	3	25	19. 22	321. 26	327. 43	14. 12	11. 30
F.	4	26	20. 9	333. 56	340. 11	8. 38	5. 36 S
Sa.	5	27	20. 58	346. 28	352. 50	2. 28 S	0. 45 N
Sun.	6	28	21. 49	359. 17	5. 54	4. 1 N	7. 16
M.	7	29	22. 44	12. 41	19. 42	10. 28	13. 32
Tu.	8	30	23. 44	26. 56	34. 26	16. 26	19. 6
W.	9	1	24. 44	42. 11	50. 9	21. 27	23. 26
Th.	10	2	0. 47	58. 29	66. 38	25. 9	26. 6
F.	11	3	1. 52	74. 59	83. 17	26. 42	26. 50
Sa.	12	4	2. 56	91. 28	99. 28	26. 28	25. 40
Sun.	13	5	3. 57	107. 11	114. 37	24. 28	22. 54
M.	14	6	4. 53	121. 45	128. 34	21. 2	18. 54
Tu.	15	7	5. 43	135. 6	141. 22	16. 35	14. 7
W.	16	8	6. 29	147. 25	153. 15	11. 31	8. 50
Th.	17	9	7. 12	158. 56	164. 30	6. 6	3. 21 N
F.	18	10	7. 53	169. 58	175. 24	0. 35 N	2. 9 S
Sa.	19	11	8. 33	180. 47	186. 12	4. 51 S	7. 29
Sun.	20	12	9. 14	191. 39	197. 9	10. 3	12. 31
M.	21	13	9. 57	202. 45	208. 28	14. 51	17. 3
Tu.	22	14	10. 41	214. 18	220. 17	19. 5	20. 55
W.	23	15	11. 28	226. 24	232. 41	22. 33	23. 57
Th.	24	16	12. 17	239. 6	245. 38	25. 5	25. 57
F.	25	17	13. 9	252. 17	259. 0	26. 31	26. 46
Sa.	26	18	14. 0	265. 46	272. 32	26. 42	26. 18
Sun.	27	19	14. 51	279. 17	285. 59	25. 36	24. 34
M.	28	20	15. 41	292. 36	299. 7	23. 14	21. 38
Tu.	29	21	16. 30	305. 32	311. 52	19. 45	17. 38
W.	30	22	17. 17	318. 7	324. 16	15. 17	12. 44
Th.	31	23	18. 3	330. 23	336. 28	10. 1	7. 9

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Tu.	1	15. 14	15. 20	55. 56	56. 17	5076	5049
W.	2	15. 27	15. 33	56. 41	57. 5	5018	4987
Th.	3	15. 40	15. 48	57. 31	57. 58	4955	4921
F.	4	15. 55	16. 3	58. 26	58. 54	4886	4852
Sa.	5	16. 10	16. 18	59. 21	59. 48	4819	4786
Sun.	6	16. 25	16. 31	60. 13	60. 35	4755	4729
M.	7	16. 36	16. 40	60. 55	61. 11	4705	4686
Tu.	8	16. 43	16. 45	61. 22	61. 29	4673	4665
W.	9	16. 46	16. 45	61. 31	61. 28	4663	4666
Th.	10	16. 43	16. 40	61. 21	61. 8	4675	4690
F.	11	16. 35	16. 29	60. 52	60. 31	4709	4734
Sa.	12	16. 23	16. 16	60. 8	59. 42	4761	4793
Sun.	13	16. 8	16. 1	59. 14	58. 46	4827	4861
M.	14	15. 53	15. 45	58. 17	57. 49	4897	4932
Tu.	15	15. 38	15. 31	57. 22	56. 55	4966	5000
W.	16	15. 24	15. 17	56. 30	56. 6	5032	5063
Th.	17	15. 11	15. 6	55. 45	55. 26	5090	5115
F.	18	15. 2	14. 58	55. 9	54. 54	5137	5157
Sa.	19	14. 54	14. 51	54. 41	54. 30	5174	5189
Sun.	20	14. 49	14. 47	54. 22	54. 15	5199	5209
M.	21	14. 46	14. 45	54. 11	54. 8	5214	5218
Tu.	22	14. 45	14. 45	54. 6	54. 6	5221	5221
W.	23	14. 45	14. 46	54. 7	54. 10	5219	5215
Th.	24	14. 47	14. 48	54. 15	54. 20	5209	5202
F.	25	14. 50	14. 52	54. 27	54. 35	5193	5182
Sa.	26	14. 55	14. 58	54. 44	54. 55	5170	5155
Sun.	27	15. 1	15. 4	55. 7	55. 19	5140	5124
M.	28	15. 8	15. 13	55. 34	55. 50	5104	5084
Tu.	29	15. 17	15. 22	56. 7	56. 25	5062	5038
W.	30	15. 28	15. 34	56. 45	57. 7	5013	4985
Th.	31	15. 40	15. 46	57. 28	57. 50	4958	4931

# *DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
$\alpha$ Pegasi.	1	59.42.42	58.13.37	56.44.22	55.15.1	53.45.35	52.16.6	50.46.36	49.17.6								
	2	47.47.35	46.18.8	44.48.44	43.19.25	41.50.13											
The Sun.	1	107.11.50	105.45.20	104.18.32	102.51.28	101.24.5	99.56.24	98.28.25	97.0.6								
	2	95.31.28	94.2.30	92.33.11	91.3.31	89.33.31	88.3.9	86.32.25	85.1.18								
	3	83.29.49	81.57.57	80.25.41	78.53.2	77.19.59	75.46.31	74.12.39	72.38.23								
	4	71.3.42	69.28.36	67.53.6	66.17.10	64.40.50	63.4.4	61.26.53	59.49.18								
	5	58.11.18	56.32.53	54.54.4	53.14.52	51.35.16	49.55.16	48.14.55	46.34.12								
	6	44.52.8	43.11.44	41.29.59	39.47.56	38.5.34											
Regulus:	10	-	-	-	-	-	76.10.7	74.17.31	72.25.11								
	11	70.33.10	68.41.27	66.50.4	64.59.1	63.8.18	61.17.58	59.28.0	57.38.26								
	12	55.49.15	54.0.29	52.12.8	50.24.12	48.36.42	46.49.38	45.3.0	43.16.49								
	13	41.31.5	39.45.48	38.0.59	36.16.37	34.32.42	32.49.15	31.6.17	29.23.46								
	14	27.41.44	26.0.10	24.19.5	22.38.28	20.58.20											
Spica $\nu$	14	-	-	-	-	-	73.19.19	71.39.40	70.0.25								
	15	68.21.35	66.43.9	65.5.6	63.27.27	61.50.11	60.13.18	58.36.46	57.0.36								
	16	55.24.47	53.49.19	52.14.11	50.39.23	49.4.55	47.30.45	45.56.54	44.23.20								
	17	42.50.4	41.17.5	39.44.23	38.11.57	36.39.48	35.7.54	33.36.14	32.4.50								
	18	30.33.41	29.2.46	27.32.6	26.1.40	24.31.27											

Stars Names.	Days	Nov.	III <sup>b</sup> .	VI <sup>b</sup> .	IX <sup>b</sup> .	Midnight.	XV <sup>b</sup> .	XVIII <sup>b</sup> .	XXI <sup>b</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	18	- - -	- - -	- - -	- - -	70.12.11	68.41.33	67.11.5	65.40.46
	19	64.10.36	68.40.35	61.10.41	59.40.54	58.11.15	56.41.43	55.12.16	53.42.55
	20	52.13.40	50.44.30	49.15.23	47.46.21	46.17.23	44.48.26	43.19.36	41.50.47
	21	40.22.0	38.53.16	37.24.33	35.55.51	34.27.11	32.58.31	31.29.51	30.1.17
	22	28.32.31	27.3.51	25.35.10	24.6.28	22.37.46	- - -	- - -	- - -
α Aquilæ.	22	- - -	- - -	- - -	- - -	70.13.29	77.57.4	76.40.45	75.24.33
	23	74.8.28	72.52.31	71.36.45	70.21.9	69.5.43	67.50.28	66.35.29	65.20.43
	24	64.6.13	62.51.58	61.38.5	60.24.31	59.11.19	57.58.32	56.46.11	55.34.17
	25	54.22.53	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	25	76.23.12	75.0.56	73.38.40	72.16.26	70.54.13	69.32.3	68.9.56	66.47.59
	26	65.25.57	64.4.4	62.42.20	61.20.43	59.59.15	58.37.58	57.16.52	55.55.59
	27	54.35.20	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	27	74.35.54	72.47.44	71.19.28	69.57.6	68.22.40	66.54.9	65.25.34	63.56.55
	28	62.28.12	60.59.25	59.30.37	58.1.46	56.32.54	55.9.59	53.35.6	52.6.12
	29	50.37.24	49.8.38	47.39.56	46.11.20	44.42.50	- - -	- - -	- - -
α Arietis.	29	- - -	- - -	- - -	- - -	85.26.25	83.50.47	82.14.54	80.38.42
	30	79.2.21	77.25.41	75.48.44	74.11.31	72.34.1	70.56.14	69.18.9	67.39.47
	31	66.1.7	64.22.9	62.42.53	61.3.19	59.23.26	57.43.14	56.2.43	54.21.53
	J. 1	52.40.43	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	29	- - -	- - -	- - -	- - -	118.47.55	117.19.29	115.50.46	114.21.47
	30	112.52.32	111.23.0	109.53.11	108.23.4	106.52.40	105.21.58	103.50.58	102.19.40
	31	100.48.3	99.16.7	97.43.52	96.11.17	94.28.23	93.5.8	91.31.34	89.57.38
	J. 1	88.23.23	- - -	- - -	- - -	- - -	- - -	- - -	- - -

# *DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Norm.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	1	46	39.20	48	13.30	49	47.57	51	22.41	52	57.43	54	33.3	56	8.41	57	44.39
	2	59	20.55	60	57.31	62	34.28	64	11.46	65	49.24	67	27.26	69	5.48	70	44.33
	3	72	23.41	74	3.12	75	43.6	77	23.25	79	4.7	80	45.15	82	26.47	84	8.49
	4	85	51.7	87	33.55	89	17.8	91	0.47	92	44.51	94	29.21	96	14.17	97	59.38
	5	99	45.26														
$\alpha$ Aquilæ.	5	52	8.57	53	31.36	54	55.30	56	20.36	57	46.50	59	14.11	60	42.30	62	11.48
	6	63	42.4	65	13.10	66	45.3	68	17.41	69	51.5	71	25.9	72	59.48	74	35.2
	7	76	10.51	77	47.10	79	23.54	81	1.2	82	38.35	84	16.26	85	54.34	87	32.57
	8	89	11.31														
The Sun.	12	39	55.25	41	36.10	43	16.33	44	56.34	46	36.12	48	15.28	49	54.19	51	32.47
	13	53	10.51	54	48.30	56	25.43	58	2.32	59	38.58	61	14.52	62	50.23	64	25.29
	14	66	0.9	67	34.24	69	8.13	70	41.38	72	14.36	73	47.13	75	19.24	76	51.10
	15	78	22.33	79	53.32	81	24.18	82	54.21	84	24.12	85	53.41	87	22.48	88	51.38
	16	90	20.0	91	48.5	93	15.50	94	43.16	96	10.23	97	37.12	99	3.43	100	29.52
	17	101	55.54	103	21.34	104	46.59	106	12.9	107	37.3	109	1.43	110	26.9	111	50.22
	18	113	14.22	114	38.9	116	1.44	117	25.8	118	48.20	120	11.22				

Stars Names.	Days	Noon.		III.		VI.		IX.		Midnight.		XV.		XVIII.		XXI.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Pollux.	16	36	2.18	37.36.52	39.11.10	40.45.13	42.19.1	43.52.34	45.25.52	47.47.53	49.47.53	51.18.16	53.40.39	55.48.31	58.15.18	60.48.31	63.18.31
	17	48	31.44	50.4.18	51.36.39	53.8.46	54.40.39	56.12.20	57.43.48	59.47.18	61.47.18	63.16.43	65.9.4	66.37.51	68.15.18	69.48.31	71.15.18
	18	60	46.8														
Regulus.	18	23	44.50	25.15.50	26.46.46	28.17.21	29.47.53	31.18.16	32.48.31	34.19.18	35.40.15	37.11.23	38.42.23	40.13.46	41.45.18	43.16.43	44.48.31
	19	35	48.36	37.18.27	38.48.11	40.17.48	41.47.18	43.16.43	44.46.2	46.15.18	47.45.18	49.14.48	50.44.27	52.11.23	53.40.15	55.9.4	56.37.51
	20	47	44.54	49.13.28	50.43.27	52.11.23	53.40.15	55.9.4	56.37.51	58.6.35	59.35.17	61.4.12	63.12.20	65.9.4	66.37.51	68.15.18	69.48.31
	21	59	35.17	61.3.57	62.34.35	64.1.12	65.29.48	66.58.23	68.26.59	70.55.38	72.24.10	74.52.34	76.21.20	77.50.48	79.19.18	80.48.31	82.17.21
	22	71	24.10														
Spica.	22	17	30.10	18.57.46	20.25.34	21.53.23	23.21.22	24.49.28	26.17.40	27.45.58	29.14.10	30.42.23	32.11.20	33.39.57	35.8.39	36.37.25	38.6.16
	23	29	14.31	30.42.48	32.11.20	33.39.57	35.8.39	36.37.25	38.6.16	39.35.12	40.13.46	41.45.18	43.16.43	44.46.2	46.15.18	47.45.18	49.14.48
	24	41	4.13	42.33.19	44.2.29	45.31.46	47.1.7	48.30.34	50.0.7	51.29.46	52.11.23	53.40.15	55.9.4	56.37.51	58.6.35	59.35.17	61.4.12
	25	53	59.30	54.29.20	55.59.16	57.29.19	58.59.28	60.29.44	62.0.7	63.30.31	64.1.12	65.2.20	66.5.16	67.14.50	68.26.59	69.48.31	71.15.18
	26	65	1.16														
Antares.	26	19	9.53	20.40.46	22.11.46	23.42.54	25.14.10	26.45.34	28.17.7	29.48.46	31.18.16	32.48.31	34.19.18	35.40.15	37.11.23	38.42.23	40.13.46
	27	31	20.38	32.52.37	34.24.45	35.57.9	37.29.30	39.2.8	40.34.56	42.7.58	43.16.43	44.46.2	46.15.18	47.45.18	49.14.48	50.44.27	52.11.23
	28	43	41.5	45.14.26	46.47.58	48.21.48	49.55.38	51.29.47	53.4.9	54.38.41	56.7.58	58.11.23	59.35.17	61.4.12	62.34.35	64.1.12	65.2.20
	29	55	13.31	57.48.32	59.23.47	60.59.16	62.35.0	64.10.59	65.47.14	67.23.41	68.59.28	70.29.44	71.58.23	73.27.51	74.56.35	76.25.48	77.54.10
	30	67	0.30	70.37.32	72.14.50	73.52.26	75.30.18	77.8.28	78.46.57	80.25.44	81.54.10	83.22.20	84.50.48	86.19.18	87.48.31	89.17.21	90.46.2
	31	89	4.49	83.44.13	85.23.56	87.3.58	88.44.19	90.25.0	91.54.10	93.23.41	94.52.34	96.21.20	97.50.48	99.19.18	100.48.31	101.17.21	102.46.2
	32	95	29.6														

# CONFIGURATIONS of the SATELLITES of JUPITER at X o'Clock in the *Evening*.

1		.4	.2	1 6 3	○			
2			.4		○	.2	.1	
3	4 <i>inf. d</i>		.3	.1	○			
4				.2	.3	○	1.	.4
5			.2	.1	○		.3	.4
6	1 ●				○		.3	.4
7					○	.1	.2	.4
8			.2	.3	○			.4
9	2. ○		.3		○	.1		.4
10			.3	.1	○		.2	.4
11			.2		○	.4	.1	
12			.2	.1	○		.3	
13			.4		○	.1	.2	.3
14					○	.2	.3	1. ○
15	.4		.2	.1	○			3 ●
16	.4				○	.1		2. ○
17			.3	.1	○		.2	
18			.4	.3	○	.1		
19			.2	.4	.1	○	.3	
20					○	.1	.4	.3
21	1. ○				○	.2	.3	.4
22	3 ● 1 ●		.2		○			.4
23			.3	.2	○	.1		.4
24			.4	.1	○		.3	.4
25	2 ●		.3		○	.2		.4
26			.2	.1	○	.3		.4
27					○	.1	.2	.4
28	4 <i>sup. d</i>			.1	○	.3	.3	
29	1 ●		.4	.2	○	.3		
30		.4		.2	○	.1		
31	.4	.3		.1	○		.2	

Days of the Week.		Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
				D. H. M.	
F.	1	2	Nicomede. Trin. T. beg.	● New Moon	---- 7. 11. 7
Sa.	2			☾ First Quarter	---- 14. 12. 58
Sun.	3	4	1st Su. af. T. [of H. T. 2 r. K. Geo. III. b. 1738. In 8 d. Boniface. D. of Cumb. b.	☉ Full Moon	---- 22. 18. 22
M.	4			☾ Last Quarter	---- 30. 3. 34
Tu.	5			Other Phenomena.	
W.	6			D. H. M.	
Th.	7			3. 22. 49	☾ 7. ✕
F.	8			10. 20. 43	☾ 2. ☼
Sa.	9			20. - -	☾ Stationary.
Sun.	10	11	2d Sunday after Trinity. St. Barnabas. In 15 days [of H. T. 3 ret.	20. 2. 24	☾ 2. ☾
M.	11			20. 12. 9	☾ 6. ☾
Tu.	12			20. 16. 4	☾ 2. ☾
W.	13			21. - -	☾ Stationary.
Th.	14			21. 4. 50	☉ enters ☼
F.	15			21. 15. 55	☾ 43 Ophiuchi.
Sa.	16			22. - -	☾ Stationary.
Sun.	17	18	3d Su. af. Trin. St. Alban. In 3 weeks of H. T. 4 ret.  Trin. Term ends. Tr. of [Edw. K. of W. S.	22. 20. 38	☾ 2. ☾
M.	18			23. 8. 27	☾ 6. ☾
Tu.	19			27. 8. 19	☾ 0. ☾
W.	20				
Th.	21				
F.	22				
Sa.	23				
Sun.	24	25	4th Su. af. Tr. Nativity of [St. John Bap.  St. Peter.		
M.	25				
Tu.	26				
W.	27				
Th.	28				
F.	29				
Sa.	30				



Days of the Week.	Days of the Month.	THE SUN'S			Equation	Diff.
		Longitude.	R <sup>t</sup> . Ascen.	Declin.	of Time.	
			in Time.	North.	Sub.	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	2. 10. 41. 57	4. 36. 24. 9	22. 4. 28	2. 37. 3	
Sa.	2	2. 11. 39. 24	4. 40. 30. 6	22. 12. 26	2. 28. 2	9. 1
Sun.	3	2. 12. 36. 50	4. 44. 36. 7	22. 20. 1	2. 18. 7	9. 5
M.	4	2. 13. 34. 15	4. 48. 43. 2	22. 27. 13	2. 8. 9	9. 8
Tu.	5	2. 14. 31. 40	4. 52. 50. 0	22. 34. 1	1. 58. 6	10. 3
						10. 6
W.	6	2. 15. 29. 4	4. 56. 57. 2	22. 40. 25	1. 48. 0	
Th.	7	2. 16. 26. 27	5. 1. 4. 7	22. 46. 26	1. 37. 1	10. 9
F.	8	2. 17. 23. 50	5. 5. 12. 5	22. 52. 2	1. 25. 8	11. 2
Sa.	9	2. 18. 21. 12	5. 9. 20. 6	22. 57. 15	1. 14. 3	11. 5
Sun.	10	2. 19. 18. 34	5. 13. 29. 0	23. 2. 3	1. 2. 6	11. 7
						12. 0
M.	11	2. 20. 15. 54	5. 17. 37. 5	23. 6. 27	0. 50. 6	
Tu.	12	2. 21. 13. 13	5. 21. 46. 3	23. 10. 27	0. 38. 4	12. 2
W.	13	2. 22. 10. 32	5. 25. 55. 2	23. 14. 2	0. 26. 1	12. 3
Th.	14	2. 23. 7. 49	5. 30. 4. 3	23. 17. 12	0. 13. 6	12. 5
F.	15	2. 24. 5. 6	5. 34. 13. 5	23. 19. 58	0. 1. 0	12. 6
						12. 6
Sa.	16	2. 25. 2. 22	5. 38. 22. 7	23. 22. 19	Add. 11. 6	
Sun.	17	2. 25. 59. 37	5. 42. 32. 1	23. 24. 16	0. 24. 4	12. 8
M.	18	2. 26. 56. 51	5. 46. 41. 5	23. 25. 48	0. 37. 2	12. 8
Th.	19	2. 27. 54. 5	5. 50. 51. 0	23. 26. 55	0. 50. 1	12. 9
W.	20	2. 28. 51. 18	5. 55. 0. 4	23. 27. 37	1. 3. 0	12. 9
						12. 8
Th.	21	2. 29. 48. 30	5. 59. 9. 8	23. 27. 54	1. 15. 8	
F.	22	3. 0. 45. 42	6. 3. 19. 3	23. 27. 47	1. 28. 6	12. 8
Sa.	23	3. 1. 42. 53	6. 7. 28. 6	23. 27. 15	1. 41. 4	12. 8
Sun.	24	3. 2. 40. 5	6. 11. 37. 9	23. 26. 18	1. 54. 1	12. 7
M.	25	3. 3. 37. 16	6. 15. 47. 2	23. 24. 56	2. 6. 8	12. 7
						12. 6
Tu.	26	3. 4. 34. 27	6. 19. 56. 3	23. 23. 10	2. 19. 3	
W.	27	3. 5. 31. 38	6. 24. 5. 3	23. 20. 59	2. 31. 7	12. 4
Th.	28	3. 6. 28. 50	6. 28. 14. 2	23. 18. 23	2. 44. 0	12. 3
F.	29	3. 7. 26. 1	6. 32. 22. 9	23. 15. 23	2. 56. 1	12. 1
Sa.	30	3. 8. 23. 13	6. 36. 31. 4	23. 11. 58	3. 8. 0	11. 9

Days	Time of Q's Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8, 3	15. 48, 9	2. 23, 6	0. 006307	10. 7 51
7	1. 8, 6	15. 48, 2	2. 23, 4	0. 006648	10. 7 32
13	1. 8, 7	15. 47, 6	2. 23, 2	0. 006896	10. 7 13
19	1. 8, 8	15. 47, 2	2. 23, 1	0. 007066	10. 6 54
25	1. 8, 8	15. 47, 0	2. 23, 0	0. 007180	10. 6 35

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfian's.</i>		<i>Emerfian's.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	0. 53. 55	* 1	13. 8. 41	5	21. 2. 9 Im.
3	19. 22. 20.	5	2. 25. 52	5	22. 57. 53 E.
5	13. 50. 48	8	15. 43. 0	13	0. 59. 48 Im.
7	8. 19. 6	12	5. 0. 7	13	2. 55. 11 E.
9	2. 47. 30	15	18. 17. 16	20	4. 57. 23 Im.
10	21. 15. 47	19	7. 34. 29	20	6. 52. 26 E.
12	15. 44. 10	22	20. 51. 43	27	8. 54. 53 Im.
* 14	10. 12. 26	* 26	10. 9. 12	* 27	10. 49. 44 E.
16	4. 40. 45	29	23. 26. 37		
17	23. 9. 5				
19	17. 37. 24				
21	12. 5. 40				
23	6. 34. 3				
25	1. 2. 23				
26	19. 30. 40				
28	13. 58. 58				
30	8. 27. 21				
IV. Satellite Conj.					
				5	17. 1 Inf.
				14	0. 44 Sep.
				22	9. 6 Inf.
				30	17. 12 Sep.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Inf. 8 <sup>d</sup> . 10 <sup>h</sup> $\frac{1}{2}$ .							
1	7. 27. 19	1. 23 S	2. 21. 23	1. 6 S	22. 5 N	0. 46	
4	8. 5. 39	2. 22	2. 20. 10	1. 58	21. 8	0. 29	
7	8. 13. 54	3. 17	2. 18. 36	2. 47	20. 12	0. 10	
10	8. 22. 9	4. 8	2. 16. 56	3. 29	19. 21	23. 45	
13	9. 0. 30	4. 55	2. 15. 24	4. 1	18. 40	23. 27	
16	9. 9. 3	5. 36	2. 14. 15	4. 20	18. 13	23. 11	
19	9. 17. 54	6. 11	2. 13. 38	4. 28	18. 2	22. 57	
22	9. 27. 9	6. 38	2. 13. 42	4. 23	18. 7	22. 45	
25	10. 6. 55	6. 55	2. 14. 27	4. 9	18. 26	22. 37	
28	10. 17. 22	7. 0	2. 15. 56	3. 46	18. 59	22. 31	
30	10. 24. 47	6. 55	2. 17. 19	3. 27	19. 25	22. 30	
♀ VENUS.							
1	7. 0. 16	2. 23 N	3. 25. 52	2. 36 N	23. 33 N	3. 17	
7	7. 9. 54	1. 57	4. 1. 9	2. 18	22. 10	3. 15	
13	7. 19. 29	1. 27	4. 6. 2	1. 52	20. 36	3. 10	
19	7. 29. 4	0. 56	4. 10. 24	1. 18	18. 54	3. 2	
25	8. 8. 36	0. 22	4. 14. 8	0. 34	17. 9	2. 51	
♂ MARS.							
1	0. 3. 3	1. 19 S	1. 0. 48	0. 55 S	10. 55 N	21. 18	
7	0. 6. 45	1. 14	1. 5. 15	0. 52	12. 28	21. 11	
13	0. 10. 26	1. 8	1. 9. 39	0. 48	13. 57	21. 3	
19	0. 14. 6	1. 2	1. 14. 2	0. 45	15. 21	20. 55	
25	0. 17. 44	0. 56	1. 18. 22	0. 41	16. 39	20. 47	
♃ JUPITER.							
1	7. 4. 7	1. 12 N	6. 26. 40	1. 24 N	9. 03	9. 3	
7	7. 4. 35	1. 12	6. 26. 20	1. 22	8. 54	8. 37	
13	7. 5. 2	1. 11	6. 26. 6	1. 21	8. 50	8. 11	
19	7. 5. 30	1. 11	6. 25. 59	1. 19	8. 49	7. 46	
25	7. 5. 57	1. 11	6. 25. 58	1. 17	8. 51	7. 21	
♄ SATURN. ☐ 18 <sup>d</sup> . 4 <sup>h</sup> .							
1	6. 2. 39	2. 22 N	5. 26. 46	2. 27 N	3. 32 N	7. 14	
7	6. 2. 51	2. 22	5. 26. 50	2. 26	3. 29	6. 50	
13	6. 3. 3	2. 22	5. 26. 57	2. 24	3. 25	6. 26	
19	6. 3. 15	2. 22	5. 27. 8	2. 23	3. 20	6. 1	
25	6. 3. 28	2. 23	5. 27. 22	2. 22	3. 13	5. 37	
♅ GEORGIAN.							
1	6. 15. 26	0. 39 N	6. 12. 44	0. 40 N	4. 25 S	8. 10	
11	6. 15. 34	0. 39	6. 12. 37	0. 40	4. 23	7. 29	
21	6. 15. 42	0. 39	6. 12. 35	0. 39	4. 22	6. 47	

## THE MOON'S

## Longitude.

## Latitude.

## Noon.

## Midnight.

## Noon.

## Midnight.

S. D. M. S.

S. D. M. S.

D. M. S.

D. M. S.

Days of the Week.	Days of the Month.	Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
F.	1	11. 12. 18. 42	11. 19. 8. 40	3. 0. 15 N	3. 28. 30 N
Sa.	2	11. 26. 4. 44	0. 3. 6. 57	3. 54. 8	4. 16. 39
Sun.	3	0. 10. 15. 14	0. 17. 29. 22	4. 35. 31	4. 50. 14
M.	4	0. 24. 48. 57	1. 2. 13. 22	5. 0. 25	5. 5. 43
Tu.	5	1. 9. 41. 48	1. 17. 13. 17	5. 5. 54	5. 0. 49
W.	6	1. 24. 46. 39	2. 2. 20. 44	4. 50. 27	4. 35. 1
Th.	7	2. 9. 54. 19	2. 17. 26. 0	4. 14. 47	3. 50. 9
F.	8	2. 24. 54. 35	3. 2. 19. 2	3. 21. 41	2. 50. 3
Sa.	9	3. 9. 38. 20	3. 16. 51. 47	2. 15. 54	1. 39. 58
Sun.	10	3. 23. 58. 48	4. 0. 59. 3	1. 2. 56 N	0. 25. 30 N
M.	11	4. 7. 52. 21	4. 14. 38. 45	0. 11. 45 S	0. 48. 14 S
Tu.	12	4. 21. 18. 25	4. 27. 51. 37	1. 23. 28	1. 57. 3
W.	13	5. 4. 18. 46	5. 10. 40. 21	2. 28. 37	2. 57. 52
Th.	14	5. 16. 56. 50	5. 23. 8. 51	3. 24. 35	3. 48. 33
F.	15	5. 29. 16. 58	6. 5. 21. 42	4. 9. 37	4. 27. 40
Sa.	16	6. 11. 23. 42	6. 17. 23. 28	4. 42. 35	4. 54. 19
Sun.	17	6. 23. 21. 35	6. 29. 18. 32	5. 2. 47	5. 7. 58
M.	18	7. 5. 14. 47	7. 11. 10. 49	5. 9. 49	5. 8. 21
Tu.	19	7. 17. 7. 0	7. 23. 3. 42	5. 3. 34	4. 55. 29
W.	20	7. 29. 1. 17	8. 5. 0. 1	4. 44. 11	4. 29. 45
Th.	21	8. 11. 0. 11	8. 17. 1. 58	4. 12. 14	3. 51. 51
F.	22	8. 23. 5. 37	8. 29. 11. 16	3. 28. 43	3. 3. 4
Sa.	23	9. 5. 19. 5	9. 11. 29. 15	2. 35. 5	2. 5. 7
Sun.	24	9. 17. 41. 52	9. 23. 57. 7	1. 33. 24	1. 0. 19 S
M.	25	10. 0. 15. 9	10. 6. 36. 6	0. 26. 13 S	0. 8. 31 N
Tu.	26	10. 13. 0. 12	10. 19. 27. 35	0. 43. 26 N	1. 18. 9
W.	27	10. 25. 58. 28	11. 2. 33. 2	1. 52. 10	2. 25. 2
Th.	28	11. 9. 11. 30	11. 15. 54. 1	2. 56. 17	3. 25. 26
F.	29	11. 22. 40. 45	11. 29. 31. 48	3. 52. 2	4. 15. 36
Sa.	30	0. 6. 27. 14	0. 13. 27. 0	4. 35. 41	4. 51. 56

THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
F.	1	24	18.49	342.33	348.49	4.19 S	1.6 S
Sa.	2	25	19.37	354.51	1.9	2.1 N	5.10 N
Sun.	3	26	20.29	7.36	14.14	8.17	11.20
M.	4	27	21.24	21.5	28.11	14.16	17.3
Tu.	5	28	22.24	35.34	43.14	19.34	21.49
W.	6	29	23.28	51.8	59.16	23.41	25.9
Th.	7	1	6	67.34	75.56	26.9	26.47
F.	8	2	9.33	84.18	92.35	26.44	26.17
Sa.	9	3	1.37	100.40	108.31	25.22	24.3
Sun.	10	4	2.39	116.4	123.19	22.22	20.23
M.	11	5	3.39	130.14	136.52	18.8	15.47
Tu.	12	6	4.19	143.14	149.22	13.6	10.27
W.	13	7	5.4	155.17	161.2	7.38	4.50 N
Th.	14	8	6.46	166.40	172.12	2.1 N	0.47 S
F.	15	9	6.27	177.41	183.9	3.32 S	6.14
Sa.	16	10	7.8	188.37	194.7	8.51	11.22
Sun.	17	11	7.50	199.41	205.21	13.46	16.2
M.	18	12	8.34	211.8	217.3	18.9	20.5
Tu.	19	13	9.20	223.6	229.18	21.49	23.19
W.	20	14	10.8	235.40	242.9	2.35	25.34
Th.	21	15	10.59	248.46	255.29	26.17	26.41
F.	22	16	11.51	262.17	269.6	26.40	26.31
Sa.	23	17	12.42	275.55	282.41	25.57	25.3
Sun.	24	18	13.33	289.24	296.2	23.50	22.20
M.	25	19	14.22	302.33	308.58	20.33	18.30
Tu.	26	20	15.19	315.16	321.28	16.14	13.46
W.	27	21	15.56	327.35	333.39	11.7	8.19
Th.	28	22	16.41	339.40	345.48	5.24 S	2.25 S
F.	29	23	17.28	351.45	357.52	0.39 N	3.43 N
Sa.	30	24	18.16	4.6	10.27	6.47	9.48

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		<i>Nom.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>		
		M. S.	M. S.	M. S.	M. S.	<i>Noon.</i>	<i>Midnight.</i>
F.	1	15.52	15.59	58.14	58.38	4901	4871
Sa.	2	16. 5	16.11	59. 2	59.25	4842	4813
Sun.	3	16.17	16.23	59.47	60. 8	4787	4761
M.	4	16.28	16.32	60.25	60.42	4740	4721
Tu.	5	16.36	16.38	60.55	61. 4	4705	4694
W.	6	16.40	16.40	61. 9	61.10	4689	4687
Th.	7	16.39	16.37	61. 6	60.57	4692	4703
F.	8	16.33	16.29	60.44	60.28	4718	4737
Sa.	9	16.23	16.17	60. 8	59.45	4761	4789
Sun.	10	16.10	16. 3	59.19	58.53	4821	4853
M.	11	15.55	15.48	58.26	57.58	4886	4921
Tu.	12	15.40	15.33	57.30	57. 2	4956	4991
W.	13	15.25	15.19	56.36	56.12	5025	5055
Th.	14	15.13	15. 7	55.50	55.29	5084	5111
F.	15	15. 2	14.58	55.11	54.55	5134	5155
Sa.	16	14.55	14.52	54.43	54.32	5171	5186
Sun.	17	14.49	14.48	54.24	54.18	5197	5205
M.	18	14.47	14.46	54.14	54.12	5210	5213
Tu.	19	14.46	14.47	54.12	54.15	5213	5209
W.	20	14.48	14.49	54.19	54.24	5203	5197
Th.	21	14.51	14.54	54.31	54.40	5187	5175
F.	22	14.56	14.59	54.49	54.59	5163	5150
Sa.	23	15. 2	15. 6	55.11	55.23	5134	5119
Sun.	24	15. 9	15.13	55.36	55.50	5102	5084
M.	25	15.17	15.21	56. 5	56.20	5064	5045
Tu.	26	15.25	15.30	56.36	56.52	5025	5004
W.	27	15.34	15.39	57. 8	57.25	4984	4962
Th.	28	15.43	15.48	57.42	58. 0	4941	4918
F.	29	15.53	15.58	58.17	58.35	4897	4875
Sa.	30	16. 2	16. 7	58.52	59. 9	4854	4833

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	88.23.23	86.48.47	85.13.50	83.38.32	82.2.53	80.26.53	78.50.31	77.13.48								
	2	75.36.43	73.59.16	72.21.29	70.43.20	69.4.50	67.25.59	65.46.48	64.7.16								
	3	62.27.23	60.47.10	59.6.37	57.25.45	55.44.33	54.3.2	52.21.15	50.39.9								
	4	48.56.47	47.14.8	45.31.15	43.48.7	42.4.45	40.21.11	38.37.25									
Regulus.	9	47.29.41	45.40.38	43.51.57	42.3.39	40.15.45	38.28.15	36.41.10	34.54.39								
	10	33.8.16	31.22.28	29.37.7	27.52.15	26.7.50	24.23.55	22.40.30	20.57.36								
	11	19.15.14															
Spica $\alpha$	11	73.15.6	71.32.35	69.50.31	68.8.53	66.27.41	64.46.55	63.6.36	61.26.41								
	12	59.47.13	58.8.10	56.29.33	54.51.19	53.13.31	51.36.7	49.59.6	48.22.29								
	13	46.46.15	45.10.24	43.34.55	41.59.49	40.25.4	38.52.41	37.16.39	35.42.57								
	14	34.9.36	32.36.34	31.3.52	29.31.29	27.59.26	26.27.42	24.56.17	23.25.12								
	15	21.54.25															
Antares.	15	67.32.11	66.0.57	64.29.49	62.58.53	61.28.9	59.57.37	58.27.15	56.57.3								
	16	55.27.1	53.57.9	52.27.24	50.57.48	49.28.19	47.58.57	46.29.41	45.0.31								
	17	43.31.27	42.2.28	40.33.32	39.4.41	37.35.53	36.7.8	34.38.25	33.9.44								
	18	31.41.4															
$\alpha$ Aquilæ.	18	87.7.18	85.50.24	84.33.32	83.16.44	81.59.59	80.43.18	79.26.42	78.10.11								
	19	76.53.46	75.37.26	74.21.14	73.5.10	71.49.13	70.33.24	69.17.46	68.2.20								
	20	66.47.41	65.32.2	64.17.15	63.2.43	61.48.27											

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX:		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	20	-	-	-	-	-	-	-	-	84. 45. 39	83. 23. 19	83. 23. 19	82. 0. 56	80. 38. 30	80. 38. 30		
	21	79. 16. 1		77. 53. 30		76. 30. 57		75. 8. 24		73. 45. 49	72. 23. 13	72. 23. 13	71. 0. 38	69. 38. 4	69. 38. 4		
	22	68. 15. 32		66. 53. 2		65. 30. 36		64. 8. 16		62. 46. 0	61. 23. 50	61. 23. 50	60. 1. 50	58. 40. 0	58. 40. 0		
	23	57. 18. 19		55. 56. 49		54. 35. 35		53. 14. 39		51. 54. 0	50. 33. 44	50. 33. 44	49. 13. 52	47. 54. 26	47. 54. 26		
α Pegasi.	24	46. 35. 28															
	24	65. 17. 32		63. 47. 57		62. 18. 18		60. 48. 36		59. 18. 51	57. 49. 5	57. 49. 5	56. 19. 19	54. 49. 35	54. 49. 35		
	25	53. 19. 51		51. 50. 8		50. 20. 32		48. 51. 1		47. 21. 37	45. 52. 23	45. 52. 23	44. 23. 19	42. 54. 28	42. 54. 28		
α Arietis.	26	41. 25. 51															
	26	81. 55. 18		80. 18. 44		78. 41. 58		77. 4. 59		75. 27. 49	73. 50. 26	73. 50. 26	72. 12. 52	70. 35. 4	70. 35. 4		
	27	68. 57. 5		67. 18. 53		65. 40. 29		64. 1. 52		62. 23. 3	60. 44. 1	60. 44. 1	59. 4. 46	57. 25. 19	57. 25. 19		
	28	55. 45. 39		54. 5. 46		52. 25. 41		50. 45. 24		49. 4. 54	47. 24. 11	47. 24. 11	45. 43. 16	44. 2. 10	44. 2. 10		
	29	42. 20. 51		40. 39. 20		38. 57. 38		37. 15. 46		35. 33. 43	33. 51. 31	33. 51. 31	32. 9. 11	30. 26. 43	30. 26. 43		
The Sun.	30	28. 44. 7															
	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28	117. 15. 0		115. 41. 52		114. 8. 30		112. 34. 53		111. 1. 2	109. 26. 56	109. 26. 56	107. 52. 36	106. 18. 1	106. 18. 1		
	29	104. 43. 12		103. 8. 8		101. 32. 48		99. 57. 14		98. 21. 25	96. 45. 21	96. 45. 21	95. 9. 1	93. 32. 27	93. 32. 27		
	30	91. 55. 37		90. 18. 32		88. 41. 13		87. 3. 38		85. 25. 49	83. 47. 45	83. 47. 45	82. 9. 25	80. 30. 51	80. 30. 51		
	J. 1	78. 52. 2															



*DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	95.29.6	97.11.9	-	-	98.53.32	100.36.17	-	-	102.19.23	-	-	-	-	-	-	-
$\alpha$ Aquilæ.	2	59.34.52	61.0.52	-	-	62.27.41	63.55.21	-	-	54.0.36	-	55.22.38	-	56.45.43	-	58.9.49	-
	3	71.24.49	72.56.41	-	-	74.29.5	76.2.2	-	-	65.23.51	-	66.53.4	-	68.22.59	-	69.53.33	-
	4	83.53.50	-	-	-	-	-	-	-	77.35.31	-	79.9.28	-	80.43.54	-	82.18.39	-
	4	36.9.4	37.47.28	-	-	39.26.57	41.7.26	-	-	42.48.51	-	44.31.10	-	46.14.12	-	47.57.58	-
$\alpha$ Pegasi.	5	49.42.27	51.27.27	-	-	53.12.57	54.58.55	-	-	56.45.22	-	58.32.11	-	60.19.19	-	62.6.45	-
	6	63.54.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	41.11.55	-	42.48.39	-	44.25.0	-	46.0.56	-
The Sun.	11	47.36.28	49.11.35	-	-	50.46.17	52.20.34	-	-	53.54.26	-	55.27.53	-	57.0.56	-	58.33.34	-
	12	60.5.47	61.37.35	-	-	63.9.0	64.40.0	-	-	66.10.37	-	67.40.50	-	69.10.41	-	70.40.10	-
	13	72.9.16	73.38.1	-	-	75.6.24	76.34.27	-	-	78.2.9	-	79.29.30	-	80.56.33	-	82.23.16	-
	14	83.49.41	85.15.48	-	-	86.41.38	88.7.11	-	-	89.32.27	-	90.57.28	-	92.22.14	-	93.46.46	-
	15	95.14.3	96.35.6	-	-	97.58.56	99.22.34	-	-	100.45.59	-	102.9.14	-	103.32.18	-	104.55.12	-
	16	106.17.56	107.40.31	-	-	109.2.57	110.25.16	-	-	111.47.26	-	113.9.29	-	114.31.27	-	115.53.18	-
	17	117.15.4	118.36.45	-	-	119.58.22	121.19.55	-	-	122.41.25	-	-	-	-	-	-	-

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	14	-	-	-	-	-	-	-	-	26.21.46	27.53.45	29.25.29	30.57.1	32.28.19	33.59.25	35.30.19	37.1.2
	15	32.28.19	-	33.59.25	-	35.30.19	-	37.1.2	-	38.31.33	40.1.54	41.32.6	43.2.8	44.32.1	46.1.44	47.31.20	49.0.48
	16	44.32.1	-	46.1.44	-	47.31.20	-	49.0.48	-	50.30.9	51.59.23	53.28.32	54.57.39	56.26.33	57.55.26	59.24.16	60.53.2
	17	56.26.33	-	57.55.26	-	59.24.16	-	60.53.2	-	62.21.44	63.50.23	65.19.1	66.47.37	68.16.11	69.44.45	71.13.18	72.41.52
	18	68.16.11	-	69.44.45	-	71.13.18	-	72.41.52	-	74.10.27	75.40.12	77.9.1	78.38.10	80.1.11	81.29.17	83.0.1	84.21.12
Spica $\pi$	19	-	-	-	-	-	-	-	-	20.15.24	21.43.9	23.11.1	24.39.0	26.1.12	27.35.17	29.3.35	30.31.59
	20	26.7.5	-	27.35.17	-	29.3.35	-	30.31.59	-	32.0.29	33.29.5	34.57.47	36.26.35	37.55.30	39.24.31	40.53.38	42.22.53
	21	37.55.30	-	39.24.31	-	40.53.38	-	42.22.53	-	43.52.14	45.21.43	46.51.19	48.21.2	49.50.53	51.20.51	52.50.57	54.21.12
	22	49.50.53	-	51.20.51	-	52.50.57	-	54.21.12	-	55.51.34	57.22.5	58.52.46	60.23.34	61.54.32	63.25.39	64.56.54	66.28.19
	23	61.54.32	-	63.25.39	-	64.56.54	-	66.28.19	-	67.59.53	69.31.1	71.1.12	72.42.13	74.13.1	75.44.18	77.15.1	78.37.1
Antares.	24	-	-	-	-	-	-	-	-	22.8.46	23.40.38	25.12.40	26.44.51	28.17.12	29.49.43	31.22.24	32.55.15
	25	28.17.12	-	29.49.43	-	31.22.24	-	32.55.15	-	34.28.16	36.1.27	37.34.48	39.8.20	40.42.2	42.15.55	43.49.58	45.24.13
	26	40.42.2	-	42.15.55	-	43.49.58	-	45.24.13	-	46.58.38	48.33.15	50.8.2	51.43.1	53.18.11	54.53.32	56.29.4	58.4.47
	27	53.18.11	-	54.53.32	-	56.29.4	-	58.4.47	-	59.40.42	61.16.49	62.53.8	64.29.39	66.6.22	67.43.17	69.20.24	70.57.43
	28	66.6.22	-	67.43.17	-	69.20.24	-	70.57.43	-	72.35.15	74.12.59	75.50.56	77.29.5	79.7.27	80.46.2	82.24.51	84.3.52
Aquilæ.	29	79.7.27	-	80.46.2	-	82.24.51	-	84.3.52	-	85.43.7	87.22.35	89.2.17	90.42.13	92.22.22	94.2.45	95.43.22	97.24.14
	30	92.22.22	-	94.2.45	-	95.43.22	-	97.24.14	-	99.5.19	101.1.12	102.1.12	103.1.12	104.1.12	105.1.12	106.1.12	107.1.12
	31	104.1.12	-	105.1.12	-	106.1.12	-	107.1.12	-	108.1.12	109.1.12	110.1.12	111.1.12	112.1.12	113.1.12	114.1.12	115.1.12
	1	106.1.12	-	107.1.12	-	108.1.12	-	109.1.12	-	110.1.12	111.1.12	112.1.12	113.1.12	114.1.12	115.1.12	116.1.12	117.1.12
	2	108.1.12	-	109.1.12	-	110.1.12	-	111.1.12	-	112.1.12	113.1.12	114.1.12	115.1.12	116.1.12	117.1.12	118.1.12	119.1.12

CONFIGURATIONS of the SATELLITES of JUPITER—  
at X o'Clock in the *Evening*.

1	4.	.3	○	.1	2●
2	.4	.2 .1	○	.3	
3	.4		○	.2 .1 .3	
4	.4	.1	○	2. 3.	
5		2. .4	○	.1 .3.	
6		3. .2	○	.1 .4	
7		3. .1	○	.2 .4	
8		.3	○	.2 .1 .4	
9	3.○	.2 .1	○	.4	
10			○	.2 .1 .3 .4	
11		.1	○	.2 .3 .4	
12		2.	○	.1 .3 .4	
13	L.○	.2	○	.4	
14	1●	3. .4	○	.2	
15		.4 .3	○	.1	
16		.4 .2 .1	○		3○
17	.4		○	.1 .3	2.○
18	.4	.1	○	.2 .3	
19	.4	.2	○	.1 .3	
20	.4	.2 .1	○		
21	1●	.4	○	.2	
22	4. Inf. ○	.3	○	.1 .2	
23		.2 .1	○	.4	
24		.2	○	.1 .3 .4	
25		.1	○	.2 .3 .4	
26	2●		○	.1 .3 .4	
27	3●	.2 .1	○		
28		3.	○	.1 .2 .4	
29		.3	○	.1 .2 .4	
30		.2 .3 .1	○	.4	

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			● New Moon - - - - 6. 18. 44
			☾ First Quarter - - - 14. 4. 28
			○ Full Moon - - - - 22. 5. 25
			☾ Last Quarter - - - 29. 8. 27
			Other Phenomena.
			D. H. M.
			1. 6. 1 ☾ ♄
			3. 12. 50 ☾ ♄ Pleiadum.
			4. - - - ♄ ♄ 8, * 17' N.
			9. 5. 53 ☾ ♄ a near Appulse.
			12. - - - ♄ μ II, * 1' N.
			14. - - - ♄ Stationary.
			17. 9. 25 I. of π * 13' 11" N of D's C
			17. 10. 3 1/2 E. of π * 12' 3/4
			17. 19. 21 ☾ σ m
			17. 23. 18 ☾ α m
			18. 23. 8 ☾ 43 Ophiuchi.
			20. 3. 46 ☾ λ ♄
			20. 15. 31 ☾ σ ♄
			22. - - - ☾ eclipsed, invisible.
			22. 15. 44 ☾ enters ♄
			24. 14. 10 ☾ θ
			28. 11. 36 ☾ η ♄
			30. 19. 34 ☾ η Pleiadum.
			31. - - - ♄ ♄ 8, * 59 1/2 S.
Sun.	1	1st Sunday after Trinity.	
M.	2	Visitation of B. V. Mary.	
Tu.	3	Camb. Commencement.	
W.	4	Transl. of St. Martin.	
Th.	5		
F.	6	Camb. Term ends.	
Sa.	7		
Sun.	8	6th Sun. after Trinity.	
M.	9	Oxford Act.	
Tu.	10		
W.	11		
Th.	12		
F.	13		
Sa.	14	Oxford Term ends.	
Sun.	15	7th Sun. aft. Tr. Swithin.	
M.	16		
Tu.	17		
W.	18		
Th.	19		
F.	20	Margaret.	
Sa.	21		
Sun.	22	8th Sun. aft. Tr. Magdalen	
M.	23		
Tu.	24		
W.	25	St. James.	
Th.	26	St. Anne.	
F.	27		
Sa.	28		
Sun.	29	9th Sunday after Trinity.	
M.	30		
Tu.	31		



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	3. 9. 20. 25	6. 40. 39. 7	23. 8. 9	3. 19. 8	11, 5
M.	2	3. 10. 17. 38	6. 44. 47. 8	23. 3. 56	3. 31. 3	11, 3
Tu.	3	3. 11. 14. 50	6. 48. 55. 7	22. 59. 18	3. 42. 6	11, 0
W.	4	3. 12. 12. 3	6. 53. 3. 3	22. 54. 16	3. 53. 6	10, 7
Th.	5	3. 13. 9. 17	6. 57. 10. 6	22. 48. 51	4. 4. 3	10, 4
F.	6	3. 14. 6. 31	7. 1. 17. 5	22. 43. 1	4. 14. 7	10, 0
Sa.	7	3. 15. 3. 45	7. 5. 24. 1	22. 36. 48	4. 24. 7	9, 7
Sun.	8	3. 16. 0. 59	7. 9. 30. 4	22. 30. 11	4. 34. 4	9, 2
M.	9	3. 16. 58. 13	7. 13. 36. 3	22. 23. 12	4. 43. 6	8, 9
Tu.	10	3. 17. 55. 28	7. 17. 41. 7	22. 15. 48	4. 52. 5	8, 4
W.	11	3. 18. 52. 42	7. 21. 46. 7	22. 8. 2	5. 0. 9	8, 0
Th.	12	3. 19. 49. 56	7. 25. 51. 2	21. 59. 53	5. 8. 9	7, 5
F.	13	3. 20. 47. 11	7. 29. 55. 3	21. 51. 21	5. 16. 4	7, 0
Sa.	14	3. 21. 44. 25	7. 33. 58. 9	21. 42. 27	5. 23. 4	6, 4
Sun.	15	3. 22. 41. 40	7. 38. 1. 9	21. 33. 11	5. 29. 8	6, 0
M.	16	3. 23. 38. 55	7. 42. 4. 5	21. 23. 33	5. 35. 8	5, 5
Tu.	17	3. 24. 36. 9	7. 46. 6. 5	21. 13. 32	5. 41. 3	4, 9
W.	18	3. 25. 33. 24	7. 50. 7. 9	21. 3. 11	5. 46. 2	4, 8
Th.	19	3. 26. 30. 39	7. 54. 8. 8	20. 52. 28	5. 50. 5	3, 8
F.	20	3. 27. 27. 55	7. 58. 9. 2	20. 41. 24	5. 54. 3	3, 2
Sa.	21	3. 28. 25. 11	8. 2. 9. 0	20. 29. 59	5. 57. 5	2, 6
Sun.	22	3. 29. 22. 27	8. 6. 8. 2	20. 18. 14	6. 0. 1	2, 1
M.	23	4. 0. 19. 44	8. 10. 6. 8	20. 6. 8	6. 2. 2	1, 6
Tu.	24	4. 1. 17. 2	8. 14. 4. 9	19. 53. 42	6. 3. 8	0, 9
W.	25	4. 2. 14. 20	8. 18. 2. 5	19. 40. 56	6. 4. 7	0, 3
Th.	26	4. 3. 11. 40	8. 21. 59. 4	19. 27. 50	6. 5. 0	0, 1
F.	27	4. 4. 9. 1	8. 25. 55. 8	19. 14. 25	6. 4. 9	0, 7
Sa.	28	4. 5. 6. 23	8. 29. 51. 5	19. 0. 41	6. 4. 2	7, 4
Sun.	29	4. 6. 3. 45	8. 33. 46. 7	18. 46. 38	6. 2. 8	1, 9
M.	30	4. 7. 1. 10	8. 37. 41. 4	18. 32. 16	6. 0. 9	2, 8
Tu.	31	4. 7. 58. 35	8. 41. 35. 5	18. 17. 36	5. 58. 4	

Days	Time of $\odot$ 's Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 7	15.46, 9	2.23, 0	0.007240	10. 6. 16
7	1. 8, 4	15.47, 0	2.23, 0	0.007222	10. 5. 56
13	1. 8, 0	15.47, 2	2.23, 1	0.007104	10. 5. 37
19	1. 7, 6	15.47, 5	2.23, 2	0.006905	10. 5. 18
25	1. 7, 1	15.48, 1	2.23, 3	0.006658	10. 4. 59

'ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	2. 55. 42	3	12. 44. 5	4	12. 52. 29 Im.
3	21. 24. 2	7	2. 1. 39	4	14. 47. 10 E.
5	15. 52. 26	10	15. 19. 20	11	16. 50. 28 Im.
* 7	10. 20. 52	14	2. 21. 30 Im.	11	18. 44. 57 E.
9	4. 49. 12	14	4. 37. 13 E.	18	20. 48. 51 Im.
10	23. 17. 38	17	15. 39. 35 Im.	18	22. 43. 6 E.
12	17. 46. 9	17	17. 55. 15 E.	26	0. 47. 37 Im.
14	12. 14. 35	21	4. 57. 50 Im.	26	2. 41. 37 E.
16	6. 43. 6	21	7. 13. 24 E.		
18	1. 11. 39	24	18. 16. 13 Im.		
19	19. 40. 13	24	20. 31. 43 E.		
21	14. 8. 46	28	7. 34. 47 Im.	IV. Satellite. Conj.	
23	8. 37. 28	28	9. 50. 13 E.		
25	3. 6. 3	31	20. 53. 26 Im.	9	2. 7. Inf.
26	21. 34. 44	31	23. 8. 47 E.	17	10. 39 Sup.
28	16. 3. 23			25	19. 59 Inf.
30	10. 32. 11				

## THE PLANETS

Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
♄ Gr. Elong. 2 <sup>d</sup> <i>M E R C U R Y.</i> Sup. ☿ 29 <sup>d</sup> . 20 <sup>h</sup> .						
1	10. 28. 38	6. 50 S	2. 18. 8	3. 16 S	19. 41 N	22. 29
4	11. 10. 53	6. 21	2. 21. 0	2. 42	20. 28	22. 29
7	11. 24. 17	5. 30	2. 24. 31	2. 4	21. 17	22. 33
10	0. 8. 59	4. 14	2. 28. 39	1. 25	22. 3	22. 39
13	0. 25. 2	2. 31	3. 3. 24	0. 45	22. 40	22. 48
16	1. 12. 22	0. 27 S	3. 8. 40	0. 7 S	23. 4	23. 0
19	2. 0. 44	1. 47 N	3. 14. 24	0. 27 N	23. 8	23. 13
22	2. 19. 38	3. 53	3. 20. 28	0. 57	22. 50	23. 28
25	3. 8. 26	5. 33	3. 26. 44	1. 20	22. 8	23. 43
28	3. 26. 29	6. 36	4. 3. 3	1. 35	21. 2	23. 57
31	4. 13. 20	7. 0	4. 9. 18	1. 44	19. 37	0. 7
♀ <i>V E N U S.</i>						
1	8. 18. 8	0. 11 S	4. 17. 5	0. 19 S	15. 26 N	2. 37
7	8. 27. 38	0. 45	4. 19. 2	1. 24	13. 48	2. 18
13	9. 7. 8	1. 17	4. 19. 47	2. 38	12. 24	1. 55
19	9. 16. 37	1. 47	4. 19. 12	4. 0	11. 17	1. 28
25	9. 26. 6	2. 14	4. 17. 11	5. 22	10. 35	0. 54
♂ <i>M A R S.</i>						
1	0. 21. 20	0. 50 S	1. 22. 39	0. 37 S	17. 51 N	20. 40
7	0. 24. 54	0. 44	1. 26. 55	0. 33	18. 57	20. 33
13	0. 28. 27	0. 38	2. 1. 7	0. 29	19. 56	20. 25
19	1. 1. 57	0. 31	2. 5. 17	0. 24	20. 48	20. 19
25	1. 5. 26	0. 25	2. 9. 24	0. 20	21. 34	20. 12
♃ <i>J U P I T E R.</i> ☐ 19 <sup>d</sup> . 13 <sup>h</sup> .						
1	7. 6. 24	1. 10 N	6. 26. 4	1. 16 N	8. 54 S	6. 57
7	7. 6. 52	1. 10	6. 26. 16	1. 14	9. 1	6. 33
13	7. 7. 19	1. 10	6. 26. 35	1. 12	9. 8	6. 9
19	7. 7. 47	1. 10	6. 26. 59	1. 11	9. 18	5. 47
25	7. 8. 14	1. 9	6. 27. 29	1. 9	9. 30	5. 25
♄ <i>S A T U R N.</i>						
1	6. 3. 39	2. 23 N	5. 27. 39	2. 20 N	3. 5 N	5. 14
7	6. 3. 51	2. 23	5. 28. 0	2. 19	2. 55	4. 50
13	6. 4. 4	2. 23	5. 28. 24	2. 18	2. 45	4. 27
19	6. 4. 16	2. 23	5. 28. 51	2. 17	2. 33	4. 5
25	6. 4. 28	2. 23	5. 29. 20	2. 16	2. 21	3. 42
♄ <i>G E O R G I A N.</i> ☐ 4 <sup>d</sup> . 13 <sup>h</sup> .						
1	6. 15. 50	0. 39 N	6. 12. 38	0. 39 N	4. 24 S	6. 6
11	6. 15. 57	0. 39	6. 12. 47	0. 39	4. 28	5. 25
21	6. 16. 5	0. 39	6. 13. 0	0. 38	4. 33	4. 46

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.				Midnight.			
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Sun.	1	0.20.31.4	0.27.39.13	5.3.55 N	5.11.21 N				
M.	2	1.4.51.9	1.12.6.30	5.13.59	5.11.39				
Tu.	3	1.19.24.40	1.26.45.5	5.4.16	4.51.53				
W.	4	2.4.6.58	2.11.29.30	4.34.39	4.12.48				
Th.	5	2.18.51.48	2.26.12.54	3.46.47	3.17.3				
F.	6	3.3.31.56	3.10.48.1	2.44.12	2.8.51				
Sa.	7	3.18.0.23	3.25.8.18	1.31.42	0.53.28 N				
Sun.	8	4.2.11.11	4.9.8.37	0.14.50 N	0.23.33 S				
M.	9	4.16.0.19	4.22.46.3	1.1.6 S	1.37.14				
Tu.	10	4.29.25.52	5.5.59.50	2.11.31	2.43.33				
W.	11	5.12.28.9	5.18.51.8	3.13.0	3.39.38				
Th.	12	5.25.9.8	6.1.22.34	4.3.15	4.23.42				
F.	13	6.7.31.57	6.13.37.50	4.40.51	4.54.40				
Sa.	14	6.19.40.45	6.25.41.14	5.5.5	5.12.5				
Sun.	15	7.1.39.52	7.7.37.14	5.15.40	5.15.50				
M.	16	7.13.33.49	7.19.30.16	5.12.38	5.6.5				
Tu.	17	7.25.27.1	8.1.24.35	4.56.15	4.43.12				
W.	18	8.7.23.28	8.13.24.1	4.27.1	4.7.50				
Th.	19	8.19.26.40	8.25.31.45	3.45.46	3.21.0				
F.	20	9.1.39.33	9.7.50.20	2.53.44	2.24.12				
Sa.	21	9.14.4.18	9.20.21.37	1.52.41	1.19.31				
Sun.	22	9.26.42.23	10.3.6.42	0.45.3 S	0.9.41 S				
M.	23	10.9.34.36	10.16.6.2	0.26.8 N	1.1.57 N				
Tu.	24	10.22.41.4	10.29.19.39	1.37.16	2.11.36				
W.	25	11.6.1.39	11.12.46.57	2.44.24	3.15.10				
Th.	26	11.19.35.25	11.26.26.58	3.43.24	4.8.40				
F.	27	0.3.21.24	0.10.18.30	4.30.36	4.48.30				
Sa.	28	0.17.18.8	0.24.20.5	5.2.20	5.11.44				
Sun.	29	1.1.24.4	1.8.29.52	5.16.28	5.16.25				
M.	30	1.15.37.8	1.22.45.38	5.11.32	5.1.49				
Tu.	31	1.29.54.59	2.7.4.48	4.47.24	4.28.29				



THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	25	19. 8.	17. 0	23. 44	12. 43 N	15. 29 N
M.	2	26	20. 4	30. 43	37. 58	18. 4	20. 25
Tu.	3	27	21. 4	45. 28	53. 13	22. 28	24. 11
W.	4	28	22. 8	61. 11	69. 19	25. 29	26. 21
Th.	5	29	23. 12	77. 32	85. 46	26. 46	26. 42
F.	6	1	6	93. 56	101. 56	26. 9	25. 10
Sa.	7	2	0. 14	109. 44	117. 16	23. 46	22. 9
Sun.	8	3	1. 11	124. 31	131. 28	19. 56	17. 37
M.	9	4	2. 3	138. 9	144. 35	15. 5	12. 25
Tu.	10	5	2. 51	150. 46	156. 46	9. 38	6. 47
W.	11	6	3. 35	162. 36	168. 19	3. 55 N	1. 3 N
Th.	12	7	4. 17	173. 57	179. 31	1. 48 S	4. 35 S
F.	13	8	4. 59	185. 3	190. 36	7. 17	9. 54
Sa.	14	9	5. 41	196. 12	201. 51	12. 24	14. 47
Sun.	15	10	6. 24	207. 36	213. 27	17. 0	19. 2
M.	16	11	7. 9	219. 26	225. 33	20. 53	22. 32
Tu.	17	12	7. 57	231. 49	238. 13	23. 56	25. 5
W.	18	13	8. 47	244. 46	251. 26	25. 57	26. 32
Th.	19	14	9. 39	258. 11	265. 0	26. 48	26. 44
F.	20	15	10. 31	271. 51	278. 41	26. 21	25. 38
Sa.	21	16	11. 23	285. 30	292. 15	24. 35	23. 14
Sun.	22	17	12. 14	298. 54	305. 27	21. 34	19. 38
M.	23	18	13. 3	311. 54	318. 15	17. 27	15. 2
Tu.	24	19	13. 50	324. 30	330. 40	12. 26	9. 40
W.	25	20	14. 36	336. 48	342. 53	6. 46	3. 46 S
Th.	26	21	15. 23	348. 58	355. 6	0. 42 S	2. 23 N
F.	27	22	16. 11	1. 17	7. 34	5. 28 N	8. 30
Sa.	28	23	17. 1	13. 59	20. 34	11. 27	14. 16
Sun.	29	24	17. 55	27. 20	34. 19	16. 55	19. 20
M.	30	25	18. 53	41. 32	48. 58	21. 30	23. 21
Tu.	31	26	19. 54	56. 36	64. 25	24. 50	25. 56

		THE MOON'S					
Days of the Week.	Days of the Month.	Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	Midnight.	Noon.	Midnight	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sun.	1	16.11	16.16	59.25	59.40	4813	4795
M.	2	16.19	16.22	59.53	60. 5	4772	4765
Tu.	3	16.25	16.27	60.15	60.22	4753	4745
W.	4	16.28	16.28	60.27	60.27	4739	4739
Th.	5	16.28	16.26	60.25	60.19	4741	4748
F.	6	16.24	16.20	60.11	59.58	4758	4773
Sa.	7	16.16	16.11	59.42	59.23	4793	4816
Sun.	8	16. 5	15.59	59. 2	58.39	4842	4870
M.	9	15.52	15.46	58.15	57.50	4900	4931
Tu.	10	15.39	15.32	57.25	57. 6	4962	4994
W.	11	15.25	15.19	56.36	56.12	5025	5055
Th.	12	15.13	15. 8	55.51	55.31	5082	5108
F.	13	15. 3	14.59	55.14	54.59	5130	5150
Sa.	14	14.55	14.53	54.46	54.36	5167	5181
Sun.	15	14.51	14.49	54.28	54.23	5191	5198
M.	16	14.48	14.48	54.20	54.20	5202	5202
Tu.	17	14.49	14.50	54.21	54.25	5201	5195
W.	18	14.52	14.54	54.32	54.40	5186	5175
Th.	19	14.56	15. 0	54.50	55. 1	5162	5148
F.	20	15. 3	15. 7	55.15	55.29	5129	5111
Sa.	21	15.11	15.15	55.44	55.59	5091	5072
Sun.	22	15.20	15.24	56.15	56.31	5051	5031
M.	23	15.29	15.33	56.48	57. 4	5009	4989
Tu.	24	15.37	15.41	57.20	57.35	4968	4950
W.	25	15.46	15.49	57.50	58. 4	4931	4913
Th.	26	15.53	15.56	58.17	58.29	4897	4882
F.	27	15.59	16. 2	58.41	58.51	4867	4855
Sa.	28	16. 5	16. 7	59. 1	59.10	4843	4832
Sun.	29	16.10	16.11	59.19	59.25	4821	4813
M.	30	16.13	16.14	59.31	59.36	4806	4806
Tu.	31	16.15	16.16	59.39	59.41	4797	4794

# *DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
The Sun.	1	78.52.1		77.12.56		75.33.38		73.54.5		72.14.19		70.34.19		68.54.7		67.13.41	
	2	65.33.2		63.52.9		62.11.4		60.29.47		58.48.19		57.6.40		55.24.51		53.42.52	
	3	52.0.44		50.18.25		48.35.59		46.53.25		45.10.44		43.27.56		41.45.3		40.2.6	
	4	38.19.3															
Spica $\eta$	8	78.56.56		77.11.46		75.26.57		73.42.29		71.58.23		70.14.39		68.31.17		66.48.18	
	9	65.5.42		63.29.30		61.41.41		60.0.16		58.19.14		56.38.36		54.58.21		53.18.30	
	10	51.39.3		49.59.59		48.21.19		46.43.2		45.5.9		43.27.39		41.50.33		40.33.50	
	11	38.37.31		37.1.34		35.25.59		33.50.47		32.15.57		30.41.30		29.7.25		27.33.43	
Antares.	12	26.0.23															
	12	71.39.27		70.5.46		68.32.22		66.59.17		65.26.28		63.53.56		62.21.39		60.49.37	
	13	59.17.51		57.46.18		56.14.59		54.43.52		53.12.59		51.42.18		50.11.47		48.41.27	
	14	47.11.18		45.41.19		44.11.29		42.41.46		41.12.13		39.42.47		38.13.26		36.44.11	
$\alpha$ Aquila.	15	35.15.3															
	15	90.16.24		88.59.2		87.41.45		86.24.34		85.7.27		83.50.26		82.33.29		81.16.49	
	16	79.59.56		78.43.17		77.26.46		76.10.22		74.54.5		73.37.57		72.21.58		71.6.8	
	17	69.50.29		68.35.1		67.19.45		66.4.40		64.49.49							
Fomalhaut.	17									88.1.34		86.39.33		85.17.27		83.55.17	
	18	82.33.3		81.10.45		79.48.24		78.26.0		77.3.32		75.41.1		74.18.28		72.55.54	

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	19	71.33.17		70.10.39		68.48.1		67.25.24		66.2.47		64.40.13		63.17.41		61.55.14	
	20	60.32.50															
α Pegasi.	20	80.43.33		79.14.29		77.45.16		76.15.52		74.46.19		73.16.37		71.46.45		70.10.46	
	21	68.46.38		67.16.21		65.45.58		64.15.28		62.44.51		61.14.8		59.43.20		58.12.29	
	22	56.41.35		55.10.38		53.39.41		52.8.45		50.37.48							
	22	-		-		-		-		91.49.14		90.12.30		88.35.33		86.58.22	
α Arietis.	23	85.20.59		83.43.23		82.5.33		80.27.31		78.49.17		77.10.49		75.32.9		73.53.16	
	24	72.14.12		70.34.55		68.55.26		67.15.45		65.35.53		63.55.50		62.15.37		60.35.13	
	25	58.54.39		57.13.54		55.33.0		53.51.57		52.10.44		50.29.22		48.47.52		47.6.14	
	26	45.24.28															
Aldebaran.	26	77.55.0		70.14.0		74.32.54		72.51.40		71.10.19		69.28.49		67.47.14		66.5.34	
	27	64.23.46		62.41.54		60.59.57		59.17.57		57.35.51		55.53.43		54.11.33		52.29.22	
	28	50.47.9		49.4.55		47.22.45		45.40.38		43.58.34		42.16.33		40.34.43		38.53.4	
	29	37.11.35		35.30.22		33.49.28		32.8.53		30.28.41							
The Sun.	27	120.41.17		119.4.37		117.27.47		115.50.50		114.13.44		112.36.30		110.59.7		109.21.37	
	28	107.43.59		106.6.13		104.28.19		102.50.18		101.12.10		99.33.55		97.55.34		96.17.5	
	29	94.38.30		92.59.48		91.21.0		89.42.5		88.3.5		86.23.59		84.44.48		83.5.32	
	30	81.26.10		79.46.42		78.7.10		76.27.33		74.47.51		73.8.5		71.28.16		69.48.22	
	31	68.8.26		66.28.26		64.48.24		63.8.20		61.28.13		59.48.4		58.7.54		56.27.43	
	A.1	54.47.31															

# *DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Non.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	32.19.43	33.52.16	35.26.3	37.0.59	38.37.1	40.14.4	41.52.0	43.30.46								
	2	45.10.22	46.50.35	48.31.24	50.12.48	51.54.48	53.37.15	55.20.7	57.3.26								
	3	58.47.9	60.31.14	62.15.37	64.0.17	65.45.13											
α Arietis.	3	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	22.13.22	24.1.1	25.49.1	27.37.20				
	4	29.25.58	31.14.52	33.3.56	34.53.12	36.42.38	38.32.8	40.21.42	42.11.19								
	5	44.1.0	45.50.42	47.40.20	49.29.55	51.19.30											
	9	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -								
	10	41.33.15	43.5.19	44.37.1	46.8.21	47.29.18	49.9.53	50.40.6	52.9.57								
The Sun.	11	53.39.27	55.8.35	56.37.23	58.5.50	59.33.57	61.1.44	62.29.11	63.56.20								
	12	65.23.9	66.49.40	68.15.54	69.41.50	71.7.29	72.32.52	73.57.59	75.22.52								
	13	76.47.28	78.11.51	79.36.1	80.59.59	82.23.43	83.47.16	85.10.57	86.33.49								
	14	87.56.49	89.19.40	90.43.21	92.4.55	93.27.20	94.49.38	96.11.49	97.33.55								
	15	98.55.55	100.17.50	101.39.42	103.1.29	104.23.13	105.44.53	107.6.32	108.28.9								
	16	109.49.45	111.11.22	112.32.59	113.54.37	115.16.16	116.37.57	117.59.40	119.21.26								
	17	120.43.15															
	14	52.47.22	54.17.14	55.46.58	57.16.33	58.46.0	60.15.20	61.44.34	63.13.42								
Regulus.	15	64.42.44	66.11.42	67.40.36	69.9.26	70.38.13	72.6.57	73.35.39	75.4.19								
	16	76.32.58															

Stars Names	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. S.	D. M. S.	D. M. S.	D. M. S.
Spica, $\eta$	16	22. 37. 12	24. 5. 9	25. 33. 11	27. 1. 17	28. 29. 28	29. 57. 44	31. 26. 6	32. 54. 33
	17	34. 23. 5	35. 51. 42	37. 20. 26	38. 49. 16	40. 18. 13	41. 47. 17	43. 16. 28	44. 45. 47
	18	46. 15. 12	47. 44. 46	49. 14. 28	50. 44. 20	52. 14. 20	53. 44. 30	55. 14. 50	56. 45. 21
	19	58. 16. 1	59. 46. 52	61. 17. 55	62. 49. 9	64. 20. 33	65. 52. 10	67. 23. 58	68. 55. 59
	20	70. 28. 11							
Antares.	20	24. 37. 10	26. 9. 44	27. 42. 31	29. 15. 31	30. 48. 43	32. 22. 8	33. 55. 47	35. 29. 39
	21	37. 3. 44	38. 38. 3	40. 12. 36	41. 47. 24	43. 22. 22	44. 57. 35	46. 33. 2	48. 8. 43
	22	49. 44. 37	51. 20. 46	52. 57. 8	54. 33. 44	56. 10. 33	57. 47. 36	59. 24. 52	61. 2. 22
	23	62. 40. 5	64. 18. 1	65. 56. 10	67. 34. 32	69. 13. 7	70. 51. 55	72. 30. 57	74. 10. 10
	24	75. 49. 37	77. 29. 17	79. 9. 8	80. 49. 12	82. 29. 28	84. 9. 55	85. 50. 34	87. 31. 24
	25	87. 12. 25	90. 53. 38	92. 35. 1	94. 16. 35	95. 58. 20	97. 40. 15	99. 22. 20	101. 4. 36
$\alpha$ Aquila.	26	102. 47. 1							
	26	54. 14. 13	55. 35. 53	56. 58. 24	58. 21. 44	59. 48. 51	61. 10. 42	62. 36. 12	64. 2. 20
	27	65. 29. 6	66. 56. 23	68. 24. 8	69. 52. 24	71. 21. 5	72. 50. 12	74. 19. 40	75. 49. 30
$\alpha$ Pegasi.	28	77. 19. 41	78. 50. 9	80. 20. 52	81. 51. 59	83. 23. 1			
	28					35. 37. 56	37. 11. 59	38. 46. 55	40. 22. 49
	29	41. 59. 9	43. 36. 21	45. 14. 10	46. 52. 33	48. 31. 31	50. 10. 52	51. 50. 38	53. 30. 47
	30	55. 11. 21	56. 52. 13	58. 33. 22	60. 14. 48	61. 56. 30	63. 38. 25	65. 20. 32	67. 2. 51
	31	68. 45. 22	70. 28. 1	72. 10. 48	73. 53. 43	75. 36. 45	77. 19. 52	79. 3. 5	80. 46. 21
	A. 1	82. 29. 41							

CONFIGURATIONS of the SATELLITES of JUPITER  
at Half an Hour past IX o'Clock in the *Evening*.

1				.2	○	.1	.3		
2			4.		○		.2	.3	
3		4.			○	1.	3.		2 ●
4				.2	○				3 ●
5					○	1.	.4		
6		.4	.3		○		2.		
7	1 ●		.4	.3	○				
8				.4.2	○	.1	.3		
9				1.	○	.4	.2	.3	
10					○		.1	.4	
11			.2	.1	○	3.		.4	
12				3.	○	.2	1.		.4
13			.3		○		2.		4.
14	1 ●		.3	2.	○				4.
15				.2	○	.1.3			
16				1.	○		.2	.3	
17	4 ○				○	.1			
18			2 ○ 4	.1	○	3.			
19	2. ○		4.	3.	○	1.			
20		4.	1.		○		2.		
21		4.		.3	○	1.			
22		.4		.2	○	.3			1. ○
23		.4		1.	○	.2			
24			.4		○	.1		3.	
25				2.	○				
26				.2	○	1.	.4		
27			3.	.1	○		2.	.4	
28	2 ●		.3		○	1.		.4	
29	3. ○			.2	○				.4
30	1 ●				○	.2	.3		4.
31					○	.1	2.	3.	4.

Days of the Week.		Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
				D. H. M.	
W.	1		Lammas-Day.	☉ New Moon	5. 3. 59
Th.	2			☾ First Quarter	12. 21. 37
F.	3			☽ Full Moon	20. 17. 3
Sa.	4			☾ Last Quarter	27. 13. 13
Sun.	5	10 <sup>th</sup> Sun. after Trinity.		Other Phenomena.	
M.	6			D. H. M.	
Tu.	7	Name of Jesus. Prince.		1. 13. 6 I. of 125 8 * 14 <sup>1</sup> / <sub>2</sub> S of D's	
W.	8	[Amelia born.]		1. 13. 27 <sup>3</sup> / <sub>4</sub> E. of 125 8 * 14 <sup>1</sup> / <sub>2</sub> S. C.	
Th.	9			2. 14. 37 ☽ : II	
F.	10	St. Lawrence.		5. - ☉ eclipsed, invisible.	
Sa.	11	Prs. of Brunswick born.		8. 3. 31 ☽ v ♄	
Sun.	12	11 <sup>th</sup> Sun. af. Tr. Prince of		13. 17. 33 ☽ π ♀	
M.	13	[Wales born, 1762]		14. 3. 21 ☽ σ ♀	
Tu.	14			14. 7. 19 ☽ α ♀	
W.	15	Assumption.		15. 7. 17 ☽ 43 Ophiuchi.	
Th.	16	Duke of York born.		16. 12. 5 ☽ λ ♀	
F.	17			16. 23. 52 ☽ σ ♀	
Sa.	18			20. 21. 46 ☽ θ ☿	
Sun.	19	12 <sup>th</sup> Sun. after Trinity.		22. - - ♄ n ♀, * 50' S.	
M.	20			22. 22. 12 ☉ enters ♍	
Tu.	21	Duke of Clarence born.		24. 17. 20 ☽ η ✕	
W.	22			25. - - ☽ β ♍, * 53 <sup>1</sup> / <sub>2</sub> N	
Th.	23			27. 1. 3 ☽ n Pleiadum.	
F.	24	St. Bartholomew.		28. 20. 15 ☽ 125 8	
Sa.	25			29. 21. 11 ☽ : II	
Sun.	26	13 <sup>th</sup> Sun. after Trinity.		31. - - ♀ Stationary.	
M.	27			31. 23. 35 ☽ δ ☿	
Tu.	28	St. Augustine.			
W.	29	Beheading St. John Bap.			
Th.	30				
F.	31				



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. Add	Diff.
		Longitude.	R. Ascen. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	4. 8. 56. 2	8. 45. 28, 9	18. 2. 37	5. 55, 3	3, 6
Th.	2	4. 9. 53. 30	8. 49. 28, 8	17. 47. 21	5. 51, 7	4, 3
F.	3	4. 10. 50. 59	8. 53. 14, 1	17. 31. 48	5. 47, 4	4, 8
Sa.	4	4. 11. 48. 29	8. 57. 5, 9	17. 15. 57	5. 42, 6	5, 4
Sun.	5	4. 12. 46. 1	9. 0. 57, 0	16. 59. 50	5. 37, 2	6, 0
M.	6	4. 13. 43. 33	9. 4. 47, 5	16. 43. 25	5. 31, 2	6, 6
Tu.	7	4. 14. 41. 7	9. 8. 37, 5	16. 26. 44	5. 24, 6	7, 2
W.	8	4. 15. 38. 42	9. 12. 26, 8	16. 9. 48	5. 17, 4	7, 8
Th.	9	4. 16. 36. 17	9. 16. 15, 5	15. 52. 36	5. 9, 6	8, 4
F.	10	4. 17. 33. 54	9. 20. 3, 7	15. 35. 9	5. 1, 2	9, 0
Sa.	11	4. 18. 31. 31	9. 23. 51, 2	15. 17. 27	4. 52, 2	9, 5
Sun.	12	4. 19. 29. 9	9. 27. 38, 2	14. 59. 30	4. 42, 7	10, 1
M.	13	4. 20. 26. 49	9. 31. 24, 6	14. 41. 19	4. 32, 6	10, 7
Tu.	14	4. 21. 24. 29	9. 35. 10, 4	14. 22. 54	4. 21, 9	11, 3
W.	15	4. 22. 22. 10	9. 38. 55, 7	14. 4. 15	4. 10, 6	11, 8
Th.	16	4. 23. 19. 52	9. 42. 40, 4	13. 45. 23	3. 58, 8	12, 4
F.	17	4. 24. 17. 35	9. 46. 24, 6	13. 26. 18	3. 40, 4	12, 9
Sa.	18	4. 25. 15. 19	9. 50. 8, 2	13. 7. 1	3. 33, 5	13, 3
Sun.	19	4. 26. 13. 4	9. 53. 51, 4	12. 47. 31	3. 20, 2	13, 9
M.	20	4. 27. 10. 50	9. 57. 34, 0	12. 27. 48	3. 6, 3	14, 4
Tu.	21	4. 28. 8. 39	10. 1. 16, 2	12. 7. 54	2. 51, 9	14, 8
W.	22	4. 29. 6. 29	10. 4. 57, 9	11. 47. 48	2. 37, 1	15, 2
Th.	23	5. 0. 4. 20	10. 8. 39, 1	11. 27. 31	2. 21, 9	15, 7
F.	24	5. 1. 2. 13	10. 12. 20, 0	11. 7. 3	2. 6, 2	16, 0
Sa.	25	5. 2. 0. 8	10. 16. 0, 5	10. 40. 24	1. 50, 2	16, 5
Sun.	26	5. 2. 58. 5	10. 19. 40, 5	10. 25. 35	1. 33, 7	16, 8
M.	27	5. 3. 56. 3	10. 23. 20, 2	10. 4. 36	1. 16, 9	17, 2
Tu.	28	5. 4. 54. 4	10. 26. 59, 5	9. 43. 27	0. 59, 7	17, 5
W.	29	5. 5. 52. 6	10. 30. 38, 5	9. 22. 9	0. 42, 2	17, 8
Th.	30	5. 6. 50. 11	10. 34. 17, 2	9. 0. 41	0. 24, 4	18, 2
F.	31	5. 7. 48. 18	10. 37. 55, 6	8. 39. 5	0. 6, 2	

Days	Time of $\odot$ 's Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 5	15. 48, 0	2. 23, 6	0. 006303	10. 4. 37
7	1. 6, 0	15. 40, 8	2. 23, 9	0. 005916	10. 4. 18
13	1. 5, 5	15. 50, 8	2. 24, 2	0. 005444	10. 3. 59
19	1. 5, 1	15. 52, 0	2. 24, 6	0. 004914	10. 3. 40
25	1. 4, 7	15. 53, 2	2. 24, 9	0. 004352	10. 3. 21

## ECLIPSES of the SATELLITES of JUPITER.

I. Sarellite.		II. Sarellite.		III. Satellite.	
<i>Emerfions.</i>					
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	5. 0. 54	4	10. 12. 24 Im.	2	4. 46. 46 Im.
2	23. 29. 41	4	12. 27. 38 E.	2	6. 40. 44 E.
4	17. 58. 39	7	23. 31. 21 Im.	9	8. 46. 24 Im.
6	12. 27. 21	8	1. 46. 29 E.	9	10. 40. 18 E.
8	6. 56. 10	11	12. 50. 25 Im.	16	12. 46. 33 Im.
10	1. 25. 8	11	15. 5. 30 E.	16	14. 40. 23 E.
11	19. 54. 4	15	2. 9. 46 Im.	23	16. 47. 5 Im.
13	14. 22. 58	15	4. 24. 49 E.	23	18. 40. 53 E.
15	8. 52. 1	18	15. 29. 6 Im.	30	20. 47. 53 Im.
17	3. 21. 0	18	17. 44. 4 E.	30	22. 41. 38 E.
18	21. 50. 9	<i>Emerfions.</i>			
20	16. 19. 3	22	7. 3. 28		
22	10. 48. 9	25	20. 23. 8		
24	5. 17. 13	29	9. 42. 45		
25	23. 46. 22				
27	18. 15. 26				
29	12. 44. 36				
31	7. 13. 45				

IV. Satellite Conj.	
3	4. 57 Sup.
11	14. 45 Inf.
19	23. 58 Sup.
28	10. 10 Inf.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	P <sup>o</sup> age Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
♿ MERCURY.						
1	4. 18. 39	7. 0 N	4. 11. 21	1. 45 N	19. 5 N	0. 12
4	5. 3. 36	6. 41	4. 17. 24	1. 46	17. 19	0. 25
7	5. 17. 10	6. 0	4. 23. 14	1. 40	15. 22	0. 36
10	5. 29. 30	5. 6	4. 28. 52	1. 30	13. 17	0. 46
13	6. 10. 47	4. 3	5. 4. 16	1. 16	11. 8	0. 55
16	6. 21. 12	2. 57	5. 9. 28	0. 58	8. 56	1. 3
19	7. 0. 56	1. 50	5. 14. 25	0. 38	6. 44	1. 10
22	7. 10. 8	0. 43 N	5. 19. 10	0. 16 N	4. 32	1. 36
25	7. 18. 55	0. 21 S *	5. 23. 43	0. 8 S	2. 22	1. 21
28	7. 27. 25	1. 23	5. 28. 3	0. 33	0. 16 N	1. 25
31	8. 5. 45	2. 22	6. 2. 11	0. 59	1. 46 S	1. 29
♀ VENUS. Inf. d 3 <sup>d</sup> . 20 <sup>h</sup> 1/2.						
1	10. 7. 10	2. 41 S	4. 13. 25	6. 45 S	10. 19 N	0. 10
7	10. 16. 39	2. 59	4. 9. 44	7. 30	10. 35	23. 26
13	10. 26. 8	3. 13	4. 6. 26	7. 48	11. 7	22. 51
19	11. 5. 38	3. 21	4. 4. 13	7. 37	11. 49	22. 21
25	11. 15. 9	3. 23	4. 3. 24	7. 6	12. 30	21. 56
♂ MARS.						
1	1. 9. 27	0. 17 S	2. 14. 8	0. 14 S	22. 18 N	20. 5
7	1. 12. 51	0. 10	2. 18. 8	0. 8	22. 48	19. 59
13	1. 16. 13	0. 4 S	2. 22. 4	0. 3 S	23. 10	19. 53
19	1. 19. 33	0. 3 N	2. 25. 58	0. 2 N	23. 27	19. 48
25	1. 22. 51	0. 9	2. 29. 48	0. 8	23. 36	19. 42
♃ JUPITER.						
1	7. 8. 46	1. 9 N	6. 28. 11	1. 8 N	9. 47 S	5. 1
7	7. 9. 14	1. 9	6. 28. 51	1. 6	10. 3	4. 40
13	7. 9. 41	1. 8	6. 29. 38	1. 5	10. 21	4. 20
19	7. 10. 9	1. 8	7. 0. 28	1. 4	10. 39	4. 1
25	7. 10. 36	1. 8	7. 1. 23	1. 2	10. 59	3. 42
♄ SATURN.						
1	6. 4. 42	2. 24 N	5. 29. 57	2. 15 N	2. 5 N	3. 17
7	6. 4. 53	2. 24	6. 0. 32	2. 14	1. 51	2. 56
13	6. 5. 6	2. 24	6. 1. 8	2. 13	1. 36	2. 36
19	6. 5. 18	2. 24	6. 1. 46	2. 13	1. 20	2. 16
25	6. 5. 30	2. 24	6. 2. 25	2. 12	1. 3	1. 56
♅ GEORGIAN.						
1	6. 16. 14	0. 39 N	6. 13. 21	0. 38 N	4. 42 S	4. 4
11	6. 16. 22	0. 39	6. 13. 45	0. 38	4. 51	3. 27
21	6. 16. 29	0. 39	6. 14. 12	0. 38	5. 1	2. 52

\* Read thus in 1<sup>st</sup> Edition.

Days of the Week.	Days of the Month.	THE MOONS			
		Longitude.		Latitude.	
		Neon.	Midnight.	Neon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	2. 14. 14. 43	2. 21. 24. 14	4. 5. 23 N	3. 38. 28 N
Th.	2	2. 28. 32. 52	3. 5. 40. 11	3. 8. 10	2. 35. 3
F.	3	3. 12. 45. 38	3. 19. 48. 44	1. 59. 40	1. 22. 38
Sa.	4	3. 26. 49. 3	4. 3. 40. 3	0. 44. 36 N	0. 6. 13 N
Sun.	5	4. 10. 39. 21	4. 17. 28. 37	0. 31. 55 S	1. 9. 13 S
M.	6	4. 24. 13. 33	5. 0. 53. 57	1. 45. 8	2. 19. 10
Tu.	7	5. 7. 29. 41	5. 14. 0. 42	2. 50. 56	3. 20. 4
W.	8	5. 20. 27. 2	5. 26. 48. 48	3. 46. 15	4. 9. 18
Th.	9	6. 3. 6. 10	6. 9. 19. 26	4. 29. 5	4. 45. 25
F.	10	6. 15. 28. 55	6. 21. 35. 2	4. 58. 17	5. 7. 39
Sa.	11	6. 27. 38. 11	7. 3. 38. 53	5. 13. 30	5. 15. 52
Sun.	12	7. 9. 37. 40	7. 15. 35. 2	5. 14. 47	5. 10. 20
M.	13	7. 21. 31. 37	7. 27. 27. 58	5. 2. 34	4. 51. 34
Tu.	14	8. 3. 24. 41	8. 9. 22. 20	4. 37. 26	4. 20. 16
W.	15	8. 15. 21. 30	8. 21. 22. 45	4. 0. 13	3. 37. 23
Th.	16	8. 27. 26. 35	9. 3. 33. 31	3. 11. 58	2. 44. 9
F.	17	9. 9. 43. 59	9. 15. 58. 23	2. 14. 10	1. 42. 16
Sa.	18	9. 22. 17. 4	9. 28. 40. 18	1. 8. 47 S	0. 34. 3 S
Sun.	19	10. 5. 8. 14	10. 11. 41. 1	0. 1. 31 N	0. 37. 29 N
M.	20	10. 18. 18. 38	10. 25. 1. 2	1. 13. 23	1. 48. 39
Tu.	21	11. 1. 48. 2	11. 8. 39. 24	2. 22. 46	2. 55. 10
W.	22	11. 15. 34. 45	11. 22. 33. 41	3. 25. 17	3. 52. 35
Th.	23	11. 29. 35. 42	0. 6. 40. 17	4. 16. 32	4. 36. 42
F.	24	0. 13. 46. 53	0. 20. 54. 56	4. 52. 43	5. 4. 15
Sa.	25	0. 28. 3. 51	1. 5. 13. 8	5. 11. 5	5. 13. 5
Sun.	26	1. 12. 22. 19	1. 19. 30. 57	5. 10. 15	5. 2. 35
M.	27	1. 26. 38. 38	2. 3. 45. 4	4. 50. 16	4. 33. 32
Tu.	28	2. 10. 49. 59	2. 17. 53. 9	4. 12. 40	3. 48. 3
W.	29	2. 24. 54. 24	3. 1. 53. 36	3. 20. 6	2. 49. 18
Th.	30	3. 8. 50. 34	3. 15. 45. 11	2. 16. 9	1. 41. 12
F.	31	3. 22. 37. 22	3. 29. 26. 59	1. 5. 0	0. 28. 6

THE MOON'S								
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.		
				Noon.	Midnight.	Noon.	Midnight.	
		D.	H. M.	D. M.	D. M.	D. M.	D. M.	
W.	1	27	20. 56	72. 22	80. 23	26. 36 N	26. 49 N	
Th.	2	28	21. 58	88. 23	96. 18	26. 36	25. 56	
F.	3	29	22. 56	104. 5	111. 40	24. 50	23. 22	
Sa.	4	30	23. 51	119. 1	126. 7	21. 33	19. 26	
Sun.	5	1	0	132. 58	139. 34	17. 4	14. 31	
M.	6	2	0. 41	145. 57	152. 7	11. 49	9. 0	
Tu.	7	3	1. 27	158. 7	163. 59	6. 7	3. 13 N	
W.	8	4	2. 10	169. 44	175. 25	0. 19 N	2. 33 S	
Th.	9	5	2. 53	181. 3	186. 40	5. 21 S	8. 4	
F.	10	6	3. 35	192. 18	197. 59	10. 41	13. 10	
Sa.	11	7	4. 19	203. 43	209. 32	15. 31	17. 41	
Sun.	12	8	5. 4	215. 27	221. 30	19. 41	21. 28	
M.	13	9	5. 50	227. 40	233. 58	23. 2	24. 21	
Tu.	14	10	6. 40	240. 24	246. 57	25. 24	26. 10	
W.	15	11	7. 31	253. 37	260. 21	26. 38	26. 48	
Th.	16	12	8. 23	267. 9	273. 57	26. 38	26. 9	
F.	17	13	9. 15	280. 46	287. 33	25. 20	24. 12	
Sa.	18	14	10. 7	294. 17	300. 56	22. 45	21. 0	
Sun.	19	15	10. 58	307. 29	313. 58	18. 59	16. 42	
M.	20	16	11. 47	320. 22	326. 41	14. 12	11. 29	
Tu.	21	17	12. 35	332. 57	339. 11	8. 37	5. 37 S	
W.	22	18	13. 22	345. 24	351. 38	2. 32 S	0. 36 N	
Th.	23	19	14. 11	357. 55	4. 17	3. 46 N	6. 53	
F.	24	20	15. 2	10. 45	17. 22	9. 56	12. 52	
Sa.	25	21	15. 55	24. 8	31. 5	15. 38	18. 11	
Sun.	26	22	16. 52	38. 14	45. 35	20. 29	22. 29	
M.	27	23	17. 52	53. 6	60. 47	24. 8	25. 24	
Tu.	28	24	18. 54	68. 35	76. 26	26. 16	26. 42	
W.	29	25	19. 55	84. 18	92. 6	26. 42	26. 16	
Th.	30	26	20. 53	99. 48	107. 19	25. 26	24. 13	
F.	31	27	21. 48	114. 38	121. 43	22. 38	20. 45	

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
W.	1	16. 16	16. 15	59. 40	59. 38	4795	4798
Th.	2	16. 14	16. 12	59. 34	59. 27	4802	4811
F.	3	16. 10	16. 7	59. 18	59. 7	4822	4835
Sa.	4	16. 3	15. 59	58. 55	58. 40	4850	4869
Sun.	5	15. 55	15. 49	58. 23	58. 4	4890	4913
M.	6	15. 44	15. 39	57. 45	57. 25	4937	4962
Tu.	7	15. 33	15. 27	57. 3	56. 41	4990	5018
W.	8	15. 21	15. 16	56. 21	56. 2	5044	5068
Th.	9	15. 11	15. 6	55. 43	55. 25	5093	5116
F.	10	15. 2	14. 58	55. 10	54. 55	5136	5155
Sa.	11	14. 55	14. 52	54. 43	54. 34	5171	5183
Sun.	12	14. 51	14. 49	54. 28	54. 24	5191	5197
M.	13	14. 49	14. 49	54. 23	54. 24	5198	5197
Tu.	14	14. 50	14. 52	54. 27	54. 33	5193	5185
W.	15	14. 54	14. 57	54. 41	54. 52	5174	5159
Th.	16	15. 1	15. 4	55. 5	55. 19	5142	5124
F.	17	15. 9	15. 14	55. 36	55. 54	5102	5079
Sa.	18	15. 19	15. 25	56. 13	56. 33	5054	5028
Sun.	19	15. 30	15. 35	56. 53	57. 13	5003	4977
M.	20	15. 41	15. 46	57. 32	57. 51	4953	4930
Tu.	21	15. 51	15. 56	58. 10	58. 27	4906	4885
W.	22	16. 0	16. 3	58. 42	58. 55	4866	4850
Th.	23	16. 7	16. 9	59. 7	59. 16	4835	4824
F.	24	16. 11	16. 13	59. 23	59. 29	4816	4809
Sa.	25	16. 13	16. 14	59. 32	59. 34	4805	4802
Sun.	26	16. 14	16. 13	59. 34	59. 32	4802	4805
M.	27	16. 13	16. 12	59. 30	59. 26	4808	4812
Tu.	28	16. 10	16. 8	59. 20	59. 14	4820	4827
W.	29	16. 6	16. 4	59. 6	58. 58	4837	4846
Th.	30	16. 1	15. 59	58. 48	58. 38	4859	4871
F.	31	15. 56	15. 52	58. 27	58. 15	4885	4900

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	1	54.	47.31	53.	7.19	51.	27.7	49.	46.57	48.	6.47	46.	26.39	44.	46.33	43.	6.30
	2	41.	26.29	38.	46.32	38.	6.39	36.	26.50	34.	47.6						
Spica $\nu$	6	-	-	-	-	-	-	-	-	50.	10.49	48.	31.27	46.	52.25	45.	13.42
	7	43.	35.19	41.	57.16	40.	19.33	38.	42.10	37.	5.8	35.	28.26	33.	52.6	32.	16.7
	8	30.	40.29	29.	5.11	27.	30.16	25.	55.43	24.	21.33	22.	47.47	21.	14.26	19.	41.30
Antares.	9	18.	8.59														
	9	63.	43.0	62.	9.29	60.	36.14	59.	3.16	57.	30.34	55.	58.8	54.	25.55	52.	53.57
	10	51.	22.13	49.	50.42	48.	19.23	46.	48.17	45.	17.24	43.	46.42	42.	16.11	40.	45.51
$\alpha$ Aquilæ.	11	39.	15.41	37.	45.40	36.	15.48	34.	46.4	33.	16.29						
	11	-	-	-	-	-	-	-	-	88.	33.24	87.	15.40	85.	58.4	84.	40.37
	12	83.	23.19	82.	6.8	80.	49.6	79.	32.14	78.	15.31	76.	58.56	75.	42.32	74.	26.18
	13	73.	10.15	71.	54.22	70.	38.42	69.	23.15	68.	8.0	66.	53.0	65.	38.14	64.	23.44
Fomalhaut.	14	63.	9.30														
	14	86.	11.59	84.	50.14	83.	28.26	82.	6.36	80.	44.43	79.	22.47	78.	0.49	76.	38.49
	15	75.	16.47	73.	54.42	72.	32.36	71.	10.29	69.	48.2	68.	26.11	67.	4.2	65.	41.54
	16	64.	19.47	62.	57.41	61.	35.39	60.	13.42	58.	51.49	57.	30.1	56.	8.23	54.	46.56
	17	53.	25.39	52.	4.38	50.	43.51	49.	23.23	48.	3.15						

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVII <sup>h</sup> .		XXI.	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
$\alpha$ Pegasi.	17	-	-	-	-	-	-	-	-	66. 57. 2		65. 26. 38		63. 56. 6		62. 25. 22	
	18	60. 54. 28		59. 23. 25		57. 52. 17		56. 21. 1		54. 49. 40		53. 18. 12		51. 46. 43		50. 15. 14	
	19	48. 43. 43		47. 12. 16		45. 40. 51		44. 9. 33		42. 38. 22							
$\alpha$ Arietis.	19	-	-	-	-	-	-	-	-	83. 14. 44		81. 35. 43		79. 56. 25		78. 16. 50	
	20	76. 36. 57		74. 56. 47		73. 16. 20		71. 35. 37		69. 54. 38		68. 13. 23		66. 31. 53		64. 50. 9	
	21	63. 8. 9		61. 25. 54		59. 43. 26		58. 0. 45		56. 17. 50		54. 34. 43		52. 51. 25		51. 7. 56	
	22	49. 24. 16															
Aldebaran.	22	81. 52. 2		80. 9. 9		78. 26. 6		76. 42. 55		74. 59. 33		73. 16. 3		71. 32. 27		69. 48. 44	
	23	68. 4. 54		66. 20. 58		64. 36. 59		62. 52. 56		61. 8. 50		59. 24. 42		57. 40. 33		55. 56. 25	
	24	54. 12. 17		52. 28. 10		50. 44. 8		49. 0. 12		47. 16. 20		45. 32. 34		43. 49. 0		42. 5. 38	
	25	40. 22. 28		38. 39. 35		36. 56. 59		35. 14. 44		33. 32. 51							
	25	-	-	-	-	-	-	-	-	74. 50. 51		73. 4. 30		71. 18. 9		69. 31. 50	
Pollux.	26	67. 45. 33		65. 59. 18		64. 13. 6		62. 26. 57		60. 40. 51		58. 54. 51		57. 8. 55		55. 23. 3	
	27	53. 37. 17		51. 51. 37		50. 6. 2		48. 20. 32		46. 35. 8							
	27	-	-	-	-	120. 27. 44		118. 48. 11		117. 8. 38		115. 29. 5		113. 49. 33		112. 10. 1	
The Sun.	26	110. 30. 31		108. 51. 2		107. 11. 36		105. 32. 11		103. 52. 49		102. 13. 30		100. 34. 14		98. 55. 1	
	27	97. 15. 51		95. 36. 45		93. 57. 43		92. 18. 45		90. 39. 52		89. 1. 3		87. 22. 18		85. 45. 38	
	28	84. 5. 3		82. 26. 33		80. 48. 9		79. 9. 50		77. 31. 37		75. 53. 29		74. 15. 27		72. 37. 32	
	29	70. 59. 42		69. 22. 0		67. 44. 24		66. 6. 55		64. 29. 33		62. 52. 18		61. 15. 10		59. 38. 10	
	30	58. 1. 18		56. 24. 34		54. 47. 59		53. 11. 32		51. 35. 14		49. 59. 5		48. 23. 5		46. 47. 14	
	31	45. 11. 33		43. 36. 2		42. 0. 41		40. 25. 31		38. 50. 32							



# DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		IIP.		VI <sup>a</sup> .		IX <sup>a</sup> .		Midnight.		XV <sup>a</sup> .		XVIII <sup>a</sup> .		XXI <sup>a</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	1	39.25.37	41.12.7	42.58.40	44.45.16	46.31.54	48.18.33	50.5.11	51.51.48	52.23.31	53.48.47	55.13.49	56.38.36	58.1.11	59.27.28	60.51.35	62.15.29
	2	53.38.25	55.25.0	57.11.32	58.58.1	60.44.27	62.30.48	64.17.3	66.3.13	68.19.11	70.4.48	72.26.59	74.49.9	76.21.23	78.2.13	80.7.51	82.18.3
	3	67.49.17	69.35.13	71.21.2	73.6.42	74.52.14	76.37.37	78.22.49	80.7.51	82.18.3	84.16.26	86.59.46	88.42.59	90.26.1	92.9.18	94.1.18	96.1.18
	4	81.52.43															
The Sun.	8	-	-	-	-	-	-	-	-	40.51.48	42.19.15	43.46.25	45.13.17	46.46.25	48.1.11	49.27.28	50.5.11
	9	46.39.52	48.6.10	49.32.13	50.58.0	52.23.31	53.48.47	55.13.49	56.38.36	58.1.11	59.27.28	60.51.35	62.15.29	64.17.3	66.3.13	68.19.11	70.4.48
	10	58.3.9	59.27.28	60.51.35	62.15.29	63.39.11	65.2.41	66.26.0	67.49.9	69.2.13	70.4.48	72.26.59	74.49.9	76.21.23	78.2.13	80.7.51	82.18.3
	11	69.12.7	70.34.56	71.57.36	73.20.8	74.42.32	76.4.48	77.26.59	78.49.3	80.7.51	82.18.3	84.16.26	86.59.46	88.42.59	90.26.1	92.9.18	94.1.18
	12	80.11.1	81.32.53	82.54.42	84.16.26	86.38.7	88.21.23	90.4.48	92.9.18	94.1.18	96.30.54	97.52.33	99.14.15	100.36.1	102.7.51	104.1.18	106.1.18
	13	91.4.33	92.26.7	93.47.42	95.9.18	96.30.54	97.52.33	99.14.15	100.36.1	102.7.51	104.1.18	106.1.18	108.48.11	110.10.35	112.2.13	114.18.35	116.1.18
	14	101.57.50	103.10.43	104.41.41	106.3.46	107.25.55	108.48.11	110.10.35	112.2.13	114.18.35	116.1.18	118.28.0	119.51.29	121.15.9	123.1.11	125.1.11	127.1.11
Spica η	15	112.55.47	114.18.35	115.41.34	117.4.42	118.28.0	119.51.29	121.15.9	123.1.11	125.1.11	127.1.11	129.1.11	131.1.11	133.1.11	135.1.11	137.1.11	139.1.11
	13	30.29.41	31.57.59	33.26.20	34.54.44	36.23.11	37.51.42	39.20.17	40.48.57	42.17.3	43.46.25	45.15.26	46.44.28	48.13.37	49.42.53	51.12.17	52.41.50
	14	42.17.41	43.46.30	45.15.26	46.44.28	48.13.37	49.42.53	51.12.17	52.41.50	54.11.32	55.41.24	57.11.25	58.41.37	60.11.59	61.42.32	63.13.17	64.44.14
	15	54.11.32	55.41.24	57.11.25	58.41.37	60.11.59	61.42.32	63.13.17	64.44.14	66.15.23	67.46.11	69.17.0	70.48.0	72.19.0	73.50.0	75.21.0	76.52.0
Antares.	16	66.15.23	67.46.11	69.17.0	70.48.0	72.19.0	73.50.0	75.21.0	76.52.0	78.22.0	79.53.0	81.24.0	83.5.0	85.26.0	87.57.0	89.28.0	91.59.0
	17	20.23.58	21.55.29	23.27.15	24.59.14	26.31.27	28.3.54	29.36.37	31.9.34	32.42.47	34.16.15	35.50.0	37.24.1	38.58.18	40.32.53	42.7.45	43.42.54
	18	32.42.47	34.16.15	35.50.0	37.24.1	38.58.18	40.32.53	42.7.45	43.42.54	45.18.21	46.54.5	48.30.8	50.6.28	51.43.6	53.20.2	54.57.16	56.34.49
	19	45.18.21	46.54.5	48.30.8	50.6.28	51.43.6	53.20.2	54.57.16	56.34.49								

Stars/ Names.	Days	Noon.		IIP.		VP.		IXP.		Midnight.		XVh.		XVIIIh.		XXh.	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	19	58.12.39		59.50.48		61.29.15		63.8.1		64.47.4		66.26.26		68.6.5		69.46.2	
	20	71.26.16		73.6.48		74.47.36		76.28.41		78.10.3		79.51.42		81.33.36		83.15.47	
	21	84.58.13		86.40.54		88.23.50		90.7.0		91.50.24		93.34.2		95.17.53		97.1.56	
	22	98.46.12															
α Aquilæ.	22	51.7.1		52.28.9		53.50.20		55.13.32		56.37.40		58.2.42		59.28.33		60.55.8	
	23	62.22.30		63.50.27		65.18.59		66.48.4		68.17.41		69.47.45		71.18.12		72.49.3	
	24	74.20.16		75.51.46		77.23.33		78.55.33		80.27.46							
	25	- - -		- - -		- - -		- - -		32.40.6		34.13.23		35.47.43		37.22.58	
α Pegasi.	25	38.59.6		40.36.2		42.13.38		43.51.50		45.30.40		47.9.52		48.49.27		50.29.25	
	26	52.9.44		53.50.18		55.31.5		57.12.5		58.53.18		60.34.49		62.16.8		63.57.42	
	27	65.39.21															
	28	22.7.8		23.51.13		25.35.28		27.19.53		29.4.27		30.49.9		32.33.53		34.18.42	
α Arietis.	28	36.3.34		37.48.24		39.33.13		41.18.1		43.2.48		44.47.32		46.32.12		48.16.50	
	29	50.1.24		51.45.54		53.30.19		55.14.39		56.58.53							
	29	- - -		- - -		- - -		- - -		26.9.12		27.46.12		29.23.47		31.1.53	
	30	32.40.27		34.19.25		35.58.42		37.38.15		39.18.4		40.57.57		42.37.56		44.18.1	
Aldebaran.	31	45.58.11		47.38.20		49.18.29		50.58.38		52.38.45		54.18.48		55.58.47		57.38.39	
	S.1	59.18.28															

# CONFIGURATIONS of the SATELLITES of JUPITER at VIII o'Clock in the *Evening*.

1				2.	1.	○		3.	4.
2					3.	2	○	.1	4.
3				3.		.1	4.	○	.2
4	●			.3	4.			○	1.
5		4.			.2	1	○	3	○
6	4.						○	1.	.2 .3
7	4.						○	2.	.2 1.○
8	.4				1.	1.	○		1.
9	3●	.4			.2		○	.1	
10			4 3. 4		1.		○		.2
11			.3		.4		○	2.	1.
12				2.	.3 .1		○		.4
13							○	.2 1.	.3 .4
14						.1	○		2. 3 .4
15	1●				2.		○		3. .4
16	3●				.2		○	.1	
17				3.	1.		○	.2	4.
18			.3				○	2. .1	
19				2.	.3 .1		○		4.
20	2.○				4.		○	1. 3	
21			4.			.1	○		2. 3
22	1●	4.			2.		○		3.
23	4.				.2		○	.1 3.	
24	.4			3.	1.		○		.2
25	.4						○	.1 2.	
26		.4			.3 2.	1.	○		
27			.4			.2	○	.3 1.	
28	4○				.1		○		.2 .3
29	2●						○	1.	.4 3.
30	1.○				.2		○		3. .4
31					3.	1.	○	.2	.4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.  D. H. M. ● New Moon - - - 3. 15. 37 ☾ First Quarter - - - 11. 15. 55 ○ Full Moon - - - 19. 3. 31 ☾ Last Quarter - - - 25. 19. 22
Sa.	1	Giles.	Other Phenomena.
Sun.	2	14th Sun. aft. Tr. London	D. H. M.
M.	3	[burnt 1666, O.S.]	10. 1. 40 ☾ π m
Tu.	4		10. 11. 31 ☾ σ m
W.	5		10. 15. 29 ☾ α m
Th.	6		10. - - - 24 λ m, * 29' S.
F.	7	Enurchus.	12. 20. 48 ☾ λ f
Sa.	8	Nativity of B. V. Mary.	13. 8. 44 ☾ σ f
Sun.	9	15th Sunday after Trinity.	15. - - - ♀ 2 ad α ☾, * 55' S.
M.	10		17. 7. 15 ☾ θ ☾
Tu.	11		20. - - - ♂ δ π, * 49' S.
W.	12		20. - - - ♀ ι m, * 15' N.
Th.	13		21. 1. 2 ☾ η *
F.	14	Holy Cross.	22. 18. 47 ☾ enters ☾
Sa.	15		23. - - - ♀ Stationary.
Sun.	16	16th Sunday after Trinity.	23. 7. 17 ☾ η Pleiadum.
M.	17	Lambert.	25. 1. 50 ☾ 125 ♂
Tu.	18		26. 2. 43 ☾ ε π
W.	19		26. - - - ♀ ξ Ω, * 30½ S.
Th.	20		27. 0. 15 ☾ ♂
F.	21	St. Matthew.	28. 5. 36 ☾ δ ☾
Sa.	22	K. G. III. crowned, 1761.	29. 9. 6 ☾ ♀
Sun.	23	17th Sunday after Trinity.	
M.	24		
Tu.	25		
W.	26	St. Cyprian.	
Th.	27		
F.	28		
Sa.	29	St. Mich. Prs. Royal b.	
Sun.	30	18th Sunday after Trinity.	

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	5. 8. 46. 26	10. 41. 33, 6	8. 17. 20	0. 12, 2	18, 7
Sun.	2	5. 9. 44. 36	10. 45. 11, 4	7. 55. 27	0. 30, 9	19, 0
M.	3	5. 10. 42. 49	10. 48. 48, 9	7. 33. 27	0. 49, 9	19, 3
Tu.	4	5. 11. 41. 3	10. 52. 26, 2	7. 11. 18	1. 9, 2	19, 5
W.	5	5. 12. 39. 19	10. 56. 3, 2	6. 49. 3	1. 28, 7	19, 7
Th.	6	5. 13. 37. 37	10. 59. 40, 0	6. 26. 41	1. 48, 4	19, 9
F.	7	5. 14. 35. 56	11. 3. 16, 6	6. 4. 13	2. 8, 3	20, 1
Sa.	8	5. 15. 34. 17	11. 6. 52, 9	5. 41. 39	2. 28, 4	20, 3
Sun.	9	5. 16. 32. 40	11. 10. 29, 1	5. 18. 59	2. 48, 7	20, 5
M.	10	5. 17. 31. 4	11. 14. 5, 1	4. 56. 14	3. 9, 2	20, 7
Tu.	11	5. 18. 29. 29	11. 17. 41, 0	4. 33. 24	3. 29, 9	20, 7
W.	12	5. 19. 27. 56	11. 21. 16, 7	4. 10. 29	3. 50, 6	20, 9
Th.	13	5. 20. 26. 25	11. 24. 52, 3	3. 47. 30	4. 11, 5	21, 0
F.	14	5. 21. 24. 55	11. 28. 27, 8	3. 24. 27	4. 32, 5	21, 1
Sa.	15	5. 22. 23. 27	11. 32. 3, 3	3. 1. 21	4. 53, 6	21, 1
Sun.	16	5. 23. 22. 0	11. 35. 38, 6	2. 38. 11	5. 14, 7	21, 1
M.	17	5. 24. 20. 35	11. 39. 14, 0	2. 14. 58	5. 35, 8	21, 2
Tu.	18	5. 25. 19. 12	11. 42. 49, 3	1. 51. 42	5. 57, 0	21, 1
W.	19	5. 26. 17. 51	11. 46. 24, 7	1. 28. 24	6. 18, 1	21, 1
Th.	20	5. 27. 16. 32	11. 50. 0, 1	1. 5. 4	6. 39, 2	21, 0
F.	21	5. 28. 15. 15	11. 53. 35, 6	0. 41. 42	7. 0, 2	20, 9
Sa.	22	5. 29. 14. 0	11. 57. 11, 3	0. 18. 19	7. 21, 1	20, 8
Sun.	23	6. 0. 12. 47	12. 0. 46, 9	0. 5. 6	7. 41, 9	20, 6
M.	24	6. 1. 11. 37	12. 4. 22, 8	0. 28. 31	8. 2, 5	20, 5
Tu.	25	6. 2. 10. 29	12. 7. 58, 8	0. 51. 57	8. 23, 0	20, 3
W.	26	6. 3. 9. 23	12. 11. 35, 0	1. 15. 23	8. 43, 3	20, 1
Th.	27	6. 4. 8. 20	12. 15. 11, 5	1. 38. 49	9. 3, 4	19, 8
F.	28	6. 5. 7. 19	12. 18. 48, 1	2. 2. 14	9. 23, 2	19, 6
Sa.	29	6. 6. 6. 21	12. 22. 25, 0	2. 25. 39	9. 42, 8	19, 3
Sun.	30	6. 7. 5. 25	12. 26. 2, 2	2. 49. 2	10. 2, 1	

Days	Time of ☉'s Semidiam. passg Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 3	15. 54. 8	2. 25. 3	0. 003657	10. 2. 59
7	1. 4. 1	15. 56. 2	2. 25. 7	0. 002999	10. 2. 39
13	1. 4. 0	15. 57. 8	2. 26. 1	0. 002286	10. 2. 20
19	1. 4. 0	15. 59. 3	2. 26. 7	0. 001554	10. 2. 1
25	1. 4. 1	16. 0. 9	2. 27. 2	0. 000828	10. 1. 42

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	1. 42. 56	1	23. 2. 27	7	0. 48. 51 Im.
3	20. 12. 8	5	12. 22. 16	7	2. 42. 37 E.
5	14. 41. 18	9	1. 42. 4	14	4. 49. 52 Im.
7	9. 10. 31	12	15. 1. 55	14	6. 43. 44 E.
9	3. 39. 40	16	4. 21. 46	21	8. 50. 57 Im.
10	22. 8. 55	19	17. 41. 38	21	10. 44. 54 E.
12	16. 38. 5	23	7. 1. 26	28	12. 51. 50 Im.
14	11. 7. 21	26	20. 21. 13	28	14. 45. 53 E.
16	5. 36. 30	30	9. 40. 55		
18	0. 5. 42				
19	18. 34. 53				
21	13. 4. 6				
23	7. 33. 16				
25	2. 2. 27				
26	20. 31. 35				
28	15. 0. 43				
30	9. 29. 51				
IV. Satellite. Conj.					
				5	19. 38½ Sup.
				14	6. 6 Im.
				22	15. 45 Sup.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage Merid
	Long.	Lat.	Long.	Lat.		
	S.D.M.	D.M.	S.D.M.	D.M.		
♿ Gr. Elong. 11°. MERCURY.						
1	8. 8.30	2.41 S	6. 3.30	1. 7 S	2.26 S	1.29
4	8.16.44	3.35	6. 7.19	1.34	4.20	1.32
7	8.25. 0	4.25	6.10.52	1.59	6. 8	1.34
10	9. 3.24	5.10	6.14. 7	2.24	7.47	1.34
13	9.12. 3	5.49	6.16.59	2.48	9.16	1.33
16	9.21. 1	6.21	6.19.25	3. 9	10.32	1.31
19	10. 0.25	6.45	6.21.18	3.27	11.31	1.27
22	10.10.25	6.58	6.22.29	3.40	12.10	1.20
25	10.21..7	6.58	6.22.48	3.45	12.21	1.10
28	11. 2.42	6.43	6.22. 5	3.40	12. 0	0.57
30	11.10.59	6.21	6.20.58	3.28	11.25	0.46
♀ VENUS.						
1	11.26.16	3.19 S	4. 4.12	6.15 S	13. 9 N	21.37
7	0. 5.48	3.10	4. 6.12	5.26	13.29	21.24
13	0.15.21	2.55	4. 9.12	4.34	13.34	21.16
19	0.24.56	2.36	4.13. 0	3.43	13.22	21.11
25	1. 4.31	2.12	4.17.28	2.53	12.52	21. 8
♂ MARS.						
1	1.26.40	0.16 N	3. 4.10	0.15 N	23.39 N	19.36
7	1.29.54	0.22	3. 7.51	0.21	23.35	19.30
13	2. 3. 5	0.28	3.11.27	0.28	23.26	19.24
19	2. 6.15	0.34	3.14.59	0.35	23.12	19.18
25	2. 9.23	0.40	3.18.25	0.42	22.53	19.11
♃ JUPITER.						
1	7.11. 8	1. 7 N	7. 2.30	1. 1 N	11.24 S	3.21
7	7.11.36	1. 7	7. 3.32	1. 0	11.46	3. 3
13	7.12. 4	1. 6	7. 4.37	0.59	12. 9	2.46
19	7.12.31	1. 6	7. 5.45	0.58	12.32	2.28
25	7.12.59	1. 6	7. 6.55	0.57	12.56	2.11
♄ SATURN. ♂ 29 <sup>d</sup> . 14 <sup>h</sup> .						
1	6. 5.44	2.24 N	6. 3.14	2.12 N	0.44 N	1.34
7	6. 5.56	2.24	6. 3.56	2.11	0.27	1.14
13	6. 6. 8	2.25	6. 4.39	2.11	0. 9 N	0.56
19	6. 6.20	2.25	6. 5.23	2.11	0. 8 S	0.37
25	6. 6.32	2.25	6. 6. 7	2.11	0.26	0.18
♅ GEORGIAN.						
1	6.16.38	0.39 N	6.14.46	0.37 N	5.16 S	2.13
11	6.16.46	0.38	6.15.20	0.37	5.29	1.40
21	6.16.53	0.38	6.15.56	0.37	5.43	1. 6

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	4. 6. 13. 53	4. 12. 58. 0	0. 8. 55 S	0. 45. 31 S
Sun.	2	4. 19. 39. 6	4. 26. 17. 8	1. 21. 12	1. 55. 27
M.	3	5. 2. 51. 57	5. 9. 23. 26	2. 27. 50	2. 57. 57
Tu.	4	5. 15. 51. 28	5. 22. 16. 2	3. 25. 28	3. 50. 6
W.	5	5. 28. 37. 2	6. 4. 54. 32	4. 11. 38	4. 29. 51
Th.	6	6. 11. 8. 35	6. 17. 19. 18	4. 44. 41	4. 56. 2
F.	7	6. 23. 26. 51	6. 29. 31. 29	5. 3. 51	5. 8. 10
Sa.	8	7. 5. 33. 32	7. 11. 33. 19	5. 9. 1	5. 6. 27
Sun.	9	7. 17. 31. 16	7. 23. 27. 51	5. 0. 35	4. 51. 29
M.	10	7. 29. 23. 36	8. 5. 19. 3	4. 39. 17	4. 24. 5
Tu.	11	8. 11. 14. 47	8. 17. 11. 24	4. 6. 3	3. 45. 19
W.	12	8. 23. 9. 34	8. 29. 9. 51	3. 22. 3	2. 56. 24
Th.	13	9. 5. 12. 57	9. 11. 19. 28	2. 28. 35	1. 58. 50
F.	14	9. 17. 30. 0	9. 23. 45. 6	1. 27. 23	0. 54. 30 S
Sa.	15	10. 0. 5. 17	10. 6. 31. 0	0. 20. 32 S	0. 14. 9 N
Sun.	16	10. 13. 2. 37	10. 19. 40. 21	0. 49. 9 N	1. 23. 59
M.	17	10. 26. 24. 22	11. 3. 14. 37	1. 58. 9	2. 31. 6
Tu.	18	11. 10. 10. 57	11. 17. 13. 1	3. 2. 17	3. 31. 5
W.	19	11. 24. 20. 23	0. 1. 32. 21	3. 56. 56	4. 19. 17
Th.	20	0. 8. 48. 8	0. 16. 6. 53	4. 37. 37	4. 51. 33
F.	21	0. 23. 27. 37	1. 0. 49. 22	5. 0. 43	5. 4. 56
Sa.	22	1. 8. 11. 9	1. 15. 32. 2	5. 4. 7	4. 58. 16
Sun.	23	1. 22. 51. 12	2. 0. 7. 56	4. 47. 34	4. 32. 15
M.	24	2. 7. 21. 37	2. 14. 31. 50	4. 12. 40	3. 49. 15
Tu.	25	2. 21. 38. 16	2. 28. 40. 43	3. 22. 28	2. 52. 49
W.	26	3. 5. 39. 6	3. 12. 33. 24	2. 20. 52	1. 47. 8
Th.	27	3. 19. 23. 46	3. 26. 10. 16	1. 12. 12	0. 36. 34 N
F.	28	4. 2. 53. 5	4. 9. 32. 26	0. 0. 46 N	0. 34. 43 S
Sa.	29	4. 16. 8. 26	4. 22. 41. 19	1. 9. 23 S	1. 42. 50
Sun.	30	4. 29. 11. 11	5. 5. 38. 13	2. 14. 37	2. 44. 24



		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	28	22. 39	128. 35	135. 13	18. 35 N	16. 12 N
Sun.	2	29	23. 26	141. 38	147. 52	13. 39	10. 57
M.	3	1	0	153. 56	159. 51	8. 10	5. 18 N
Tu.	4	2	0. 10	165. 39	171. 23	2. 26 N	0. 27 S
W.	5	3	0. 54	177. 4	182. 43	3. 18 S	6. 5
Th.	6	4	1. 37	188. 22	194. 2	8. 47	11. 22
F.	7	5	2. 20	199. 46	205. 34	13. 49	16. 7
Sa.	8	6	3. 5	211. 27	217. 26	18. 14	20. 10
Sun.	9	7	3. 51	223. 32	229. 45	21. 53	23. 21
M.	10	8	4. 40	236. 5	242. 31	24. 35	25. 32
Tu.	11	9	5. 30	249. 3	255. 41	26. 13	26. 35
W.	12	10	6. 21	262. 21	269. 4	26. 39	26. 24
Th.	13	11	7. 13	275. 47	282. 30	25. 50	24. 57
F.	14	12	8. 5	289. 10	295. 48	23. 46	22. 16
Sa.	15	13	8. 55	302. 21	308. 51	20. 29	18. 26
Sun.	16	14	9. 45	315. 16	321. 38	16. 8	13. 36
M.	17	15	10. 33	327. 58	334. 16	10. 52	7. 59
Tu.	18	16	11. 22	340. 33	346. 52	4. 57 S	1. 49 S
W.	19	17	12. 11	353. 14	359. 41	1. 22 N	4. 35 N
Th.	20	18	13. 2	6. 15	12. 56	7. 45	10. 50
F.	21	19	13. 57	19. 48	26. 51	13. 46	16. 32
Sa.	22	20	14. 54	34. 5	41. 31	19. 2	21. 16
Sun.	23	21	15. 55	49. 8	56. 54	23. 8	24. 38
M.	24	22	16. 57	64. 47	72. 43	25. 43	26. 22
Tu.	25	23	17. 59	80. 40	88. 32	26. 34	26. 20
W.	26	24	18. 58	96. 16	103. 50	25. 41	24. 39
Th.	27	25	19. 53	111. 11	118. 18	23. 15	21. 32
F.	28	26	20. 44	125. 11	131. 49	19. 33	17. 20
Sa.	29	27	21. 31	138. 15	144. 28	14. 55	12. 21
Sun.	30	28	22. 16	150. 31	156. 26	9. 40	6. 54

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sa.	1	15.49	15.45	58. 1	57.47	4917	4934
Sun.	2	15.41	15.36	57.32	57.16	4953	4973
M.	3	15.32	15.27	57. 0	56.43	4994	5015
Tu.	4	15.23	15.18	56.26	56.10	5037	5058
W.	5	15.14	15.10	55.54	55.38	5079	5099
Th.	6	15. 6	15. 1	55.23	55. 8	5119	5138
F.	7	14.58	14.55	54.56	54.45	5154	5169
Sa.	8	14.53	14.51	54.36	54.28	5181	5191
Sun.	9	14.49	14.48	54.23	54.20	5198	5202
M.	10	14.48	14.49	54.19	54.21	5203	5201
Tu.	11	14.50	14.52	54.26	54.33	5194	5185
W.	12	14.54	14.58	54.42	54.54	5173	5157
Th.	13	15. 2	15. 6	55. 9	55.26	5137	5115
F.	14	15.11	15.17	55.45	56. 6	5090	5063
Sa.	15	15.23	15.30	56.28	56.52	5035	5004
Sun.	16	15.37	15.43	57.17	57.41	4972	4942
M.	17	15.50	15.56	58. 6	58.30	4911	4881
Tu.	18	16. 3	16. 8	58.53	59.13	4853	4828
W.	19	16.13	16.18	59.32	59.49	4805	4784
Th.	20	16.21	16.24	60. 1	60.10	4770	4759
F.	21	16.26	16.26	60.17	60.20	4751	4747
Sa.	22	16.26	16.25	60.20	60.16	4747	4752
Sun.	23	16.24	16.22	60.10	60. 2	4759	4769
M.	24	16.19	16.15	59.51	59.39	4782	4797
Tu.	25	16.11	16. 7	59.25	59.10	4813	4832
W.	26	16. 3	15.59	58.55	58.39	4850	4870
Th.	27	15.54	15.50	58.22	58. 6	4891	4911
F.	28	15.45	15.41	57.49	57.33	4932	4952
Sa.	29	15.36	15.32	57.16	57. 0	4973	4994
Sun.	30	15.28	15.24	56.45	56.30	5013	5032

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	5	68. 11. 48	66. 37. 14	65. 2. 54	63. 28. 48	61. 54. 57	60. 21. 20	58. 47. 56	57. 14. 46	49. 32. 16	48. 0. 25	46. 28. 45	44. 57. 18	43. 22. 14	42. 52. 10		
	6	55. 41. 50	54. 9. 7	52. 36. 37	51. 4. 20	49. 32. 16	48. 0. 25	46. 28. 45	44. 57. 18	37. 22. 50	35. 52. 28	34. 22. 14	32. 52. 10				
	7	43. 26. 2	41. 54. 58	40. 24. 5	38. 53. 22												
	8	31. 22. 15															
α Aquilæ.	8	86. 50. 50	85. 32. 50	84. 15. 0	82. 57. 20	81. 39. 51	80. 22. 32	79. 5. 25	77. 48. 30	71. 26. 59	70. 11. 22	68. 56. 1	67. 40. 56				
	9	76. 31. 46	75. 15. 14	73. 58. 55	72. 42. 50	71. 26. 59	70. 11. 22	68. 56. 1	67. 40. 56	61. 29. 59							
	10	66. 26. 8	65. 11. 38	63. 57. 25	62. 43. 32												
	11																
Fomalhaut.	10																
	11	79. 4. 55	77. 43. 35	76. 22. 16	75. 0. 58	73. 39. 40	72. 18. 22	70. 57. 6	69. 35. 51	84. 30. 16	83. 8. 56	81. 47. 35	80. 26. 15				
	12	68. 14. 37	66. 53. 25	65. 32. 16	64. 11. 11	62. 50. 9	61. 29. 10	60. 8. 17	58. 47. 31	73. 39. 40	72. 18. 22	70. 57. 6	69. 35. 51				
	13	57. 26. 51	56. 6. 17	54. 45. 56	53. 25. 47	52. 5. 50	50. 46. 10	49. 26. 48	48. 7. 46	62. 50. 9	61. 29. 10	60. 8. 17	58. 47. 31				
α Pegasi.	14	46. 49. 5															
	14	65. 26. 40	63. 57. 17	62. 27. 43	60. 57. 57	59. 28. 1	57. 57. 55	56. 27. 42	54. 57. 20	52. 5. 50	50. 46. 10	49. 26. 48	48. 7. 46				
	15	53. 26. 51	51. 56. 16	50. 25. 36	48. 54. 52	47. 24. 4											
	16																
α Arietis.	15																
	16	81. 52. 33	80. 13. 41	78. 34. 27	76. 54. 50	75. 14. 51	73. 34. 29	71. 53. 45	70. 12. 38	88. 24. 18	86. 46. 55	85. 9. 10	83. 31. 3				
	17	68. 31. 10	66. 49. 20	65. 7. 8	63. 24. 36	61. 41. 42	59. 58. 27	58. 14. 53	56. 30. 59	75. 14. 51	73. 34. 29	71. 53. 45	70. 12. 38				
	18	54. 46. 46	53. 2. 14	51. 17. 24	49. 32. 18	47. 46. 54	46. 1. 15	44. 15. 21	42. 29. 13	61. 41. 42	59. 58. 27	58. 14. 53	56. 30. 59				
	19	40. 42. 51															

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	19	73.14.36	71.28.49	69.42.49	67.56.38	66.10.15	64.23.42	62.37.2	60.50.15	51.55.11	50.8.6	48.21.5	46.34.11	44.49.0	43.11.18	41.26.36	39.41.11
	20	59.3.21	57.16.21	55.29.20	53.42.16	51.55.11	50.8.6	48.21.5	46.34.11	37.42.1	35.56.27	34.11.18	32.26.36	30.41.11	28.56.11	27.11.11	25.26.11
	21	44.47.21	43.0.38	41.14.10	39.27.58	37.42.1	35.56.27	34.11.18	32.26.36	23.56.11	22.11.11	20.26.11	18.41.11	16.56.11	15.11.11	13.26.11	11.41.11
	22	30.42.24	28.56.11	27.11.11	25.26.11	23.56.11	22.11.11	20.26.11	18.41.11	16.56.11	15.11.11	13.26.11	11.41.11	9.56.11	8.11.11	6.26.11	4.41.11
Pollux.	22	71.55.24	70.6.3	68.16.48	66.27.37	64.38.33	62.49.35	61.0.46	59.12.5	50.11.7	48.23.31	46.36.8	44.49.0	43.11.18	41.26.36	39.41.11	37.56.11
	23	57.23.32	55.35.9	53.46.57	51.58.56	50.11.7	48.23.31	46.36.8	44.49.0	37.42.1	35.56.27	34.11.18	32.26.36	30.41.11	28.56.11	27.11.11	25.26.11
	24	43.2.7	41.14.10	39.27.58	37.42.1	35.56.27	34.11.18	32.26.36	30.41.11	28.56.11	27.11.11	25.26.11	23.56.11	22.11.11	20.26.11	18.41.11	16.56.11
Regulus.	24	79.45.4	77.57.25	76.9.59	74.22.45	72.35.43	70.48.54	69.2.18	67.15.56	58.27.26	56.42.26	54.57.40	53.13.9	51.28.52	49.43.52	47.58.52	46.13.52
	25	65.29.46	63.43.50	61.58.8	60.12.40	58.27.26	56.42.26	54.57.40	53.13.9	46.36.8	44.49.0	43.11.18	41.26.36	39.41.11	37.56.11	36.11.11	34.26.11
	26	51.28.52	49.43.52	47.58.52	46.13.52	44.28.52	42.43.52	40.58.52	39.13.52	37.28.52	35.43.52	33.58.52	32.13.52	30.28.52	28.43.52	26.58.52	25.13.52
The Sun.	23	-	-	-	-	-	-	-	-	120.27.54	118.47.8	117.6.33	115.26.8	113.45.54	111.6.33	109.26.8	107.41.11
	24	113.45.54	112.5.51	110.26.0	108.46.20	107.6.52	105.27.36	103.48.33	102.9.43	101.14.33	99.35.37	97.56.41	96.17.45	94.38.49	92.59.53	91.20.57	89.41.61
	25	100.31.6	98.52.43	97.14.33	95.36.37	93.58.55	92.21.26	90.44.12	89.7.11	88.29.15	86.51.19	85.13.23	83.34.27	81.55.31	80.16.35	78.37.39	76.58.43
	26	87.30.25	85.53.54	84.17.36	82.41.33	81.5.44	79.30.8	77.54.47	76.19.29	75.44.12	73.65.16	71.86.20	70.7.24	68.28.28	66.49.32	65.10.36	63.31.40
	27	74.44.46	73.10.8	71.35.44	70.1.35	68.27.39	66.53.57	65.20.29	63.47.14	62.13.18	60.39.22	59.5.26	57.21.30	55.47.34	54.13.38	52.39.42	51.5.46
	28	62.14.14	60.41.27	59.8.55	57.36.36	56.4.31	54.32.40	53.1.3	51.29.39	49.55.43	48.21.47	46.47.51	45.13.55	43.39.59	42.6.63	40.32.67	38.58.71
	29	49.58.30	48.27.34	46.56.52	45.26.24	43.56.10	42.26.10	40.56.25	39.26.54	37.56.40	36.26.26	34.56.12	33.25.58	31.55.44	30.25.30	28.55.16	27.25.10
	30	37.57.37	36.27.31	34.57.25	33.27.19	31.57.13	30.27.7	28.57.1	27.27.5	25.57.5	24.27.5	22.57.5	21.27.5	19.57.5	18.27.5	16.57.5	15.27.5

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Aldebaran.	1	59.	18.28	60.	58.12	62.	37.48	64.	17.16	65.	56.36	67.	35.47	69.	14.49	70.	53.41
	2	72.	32.24														
The Sun.	7	39.	7.32	40.	31.0	41.	54.18	43.	17.26	44.	40.25	46.	3.15	47.	25.56	48.	48.29
	8	50.	10.53	51.	33.9	52.	55.17	54.	17.19	55.	39.13	57.	1.1	58.	22.44	59.	44.21
	9	61.	5.53	62.	27.20	63.	48.44	65.	10.5	66.	31.22	67.	52.37	69.	13.51	70.	35.4
	10	71.	56.15	73.	17.26	74.	38.58	75.	59.50	77.	21.4	78.	42.20	80.	3.38	81.	25.0
	11	82.	46.25	84.	7.54	85.	29.29	86.	51.9	88.	12.55	89.	34.48	90.	56.49	92.	18.58
	12	93.	41.15	95.	3.40	96.	26.15	97.	49.1	99.	11.56	100.	35.4	101.	58.24	103.	21.56
	13	104.	45.41	106.	6.39	107.	33.52	108.	58.20	110.	23.2	111.	48.0	113.	13.14	114.	38.45
	14	116.	4.32	117.	30.37	118.	56.59	120.	23.40	121.	50.39						
	11	-	-	-	-	-	-	-	-	56.	1.10	57.	30.22	58.	59.41	60.	29.8
	12	61.	58.44	63.	28.29	64.	58.24	66.	28.30	67.	58.47	69.	29.16	70.	59.57	72.	30.51
	13	74.	1.59														
Spica $\mu$	13	28.	11.50	29.	43.20	31.	15.4	32.	47.3	34.	19.17	35.	51.47	37.	24.34	38.	57.37
	14	40.	30.58	42.	4.37	43.	38.34	45.	12.50	46.	47.25	48.	22.20	49.	57.34	51.	33.10
	15	53.	9.5	54.	45.22	56.	22.1	57.	59.1	59.	36.22	61.	14.6	62.	52.11	64.	30.40
	16	66.	9.30	67.	48.44	69.	28.20	71.	8.19	72.	48.41	74.	29.26	76.	10.34	77.	52.5
	17	79.	33.58	81.	16.14	82.	58.52	84.	41.51	86.	25.13	88.	8.57	89.	53.1	91.	37.27
	18	93.	22.13	95.	7.19	96.	52.45	98.	38.30	100.	24.34						
Antares.																	

Stars Names.	Days	Nov.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
♄ Aquilæ.	18	-	-	-	-	-	-	-	-	52.23.52	53.47.33	55.12.21	56.38.12	57.12.21	58.38.12	59.12.21	60.38.12
	19	58.5.2	59.32.50	61.1.26	62.30.50	63.30.50	64.30.50	65.30.50	66.30.50	64.1.3	65.31.55	67.3.22	68.35.24	69.3.22	70.3.22	71.3.22	72.3.22
	20	70.8.2	71.41.8	73.14.37	74.48.31	75.48.31	76.48.31	77.48.31	78.48.31	76.22.49	77.57.24	79.32.16	81.7.22	82.32.16	83.7.22	84.7.22	85.7.22
	21	82.42.38	83.42.38	84.42.38	85.42.38	86.42.38	87.42.38	88.42.38	89.42.38	87.22.49	88.57.24	90.32.16	92.7.22	93.32.16	94.7.22	95.7.22	96.7.22
α Pegasi.	21	34.56.4	36.33.45	38.12.19	39.51.43	41.31.43	43.12.44	44.54.6	46.36.1	41.31.52	43.12.44	44.54.6	46.36.1	48.18.26	50.0.0	51.42.38	53.24.0
	22	48.18.26	50.1.9	51.44.8	53.27.24	55.10.56	56.54.37	58.38.26	60.22.20	55.10.56	56.54.37	58.38.26	60.22.20	62.6.15	64.18.26	66.0.0	67.42.38
	23	62.6.15	64.18.26	66.0.0	67.42.38	69.24.0	71.6.15	72.48.31	74.30.50	70.24.0	71.6.15	72.48.31	74.30.50	76.12.44	77.57.24	79.42.38	81.28.0
♈ Arietis.	23	18.29.44	20.15.20	22.1.14	23.47.21	25.33.39	27.20.7	29.6.37	30.53.10	25.33.39	27.20.7	29.6.37	30.53.10	32.39.46	34.26.14	36.12.36	37.58.53
	24	32.39.46	34.26.14	36.12.36	37.58.53	39.45.4	41.31.5	43.16.57	45.2.39	39.45.4	41.31.5	43.16.57	45.2.39	46.48.12	48.33.34	50.18.44	52.3.42
	25	46.48.12	48.33.34	50.18.44	52.3.42	53.48.28	55.33.39	57.18.41	59.3.42	53.48.28	55.33.39	57.18.41	59.3.42	61.3.42	63.18.41	65.3.42	67.18.41
Aldebaran.	25	-	-	-	-	-	-	-	-	23.8.55	24.44.47	26.21.22	27.58.33	29.34.51	31.11.0	32.53.3	34.31.52
	26	29.36.17	31.14.31	32.53.3	34.31.52	36.11.0	37.50.9	39.29.21	41.8.37	36.11.0	37.50.9	39.29.21	41.8.37	42.47.56	44.27.11	46.6.22	47.45.31
	27	42.47.56	44.27.11	46.6.22	47.45.31	49.24.36	51.3.34	52.42.26	54.21.11	49.24.36	51.3.34	52.42.26	54.21.11	55.59.49	57.38.19	59.16.41	60.54.54
	28	55.59.49	57.38.19	59.16.41	60.54.54	62.32.58	64.10.53	65.48.38	67.26.13	62.32.58	64.10.53	65.48.38	67.26.13	69.3.37	71.18.10	73.0.0	74.42.38
Pollux.	29	69.3.37	71.18.10	73.0.0	74.42.38	76.28.0	78.9.0	79.48.31	81.28.0	76.28.0	78.9.0	79.48.31	81.28.0	82.48.31	84.18.10	85.57.9	87.33.47
	29	26.43.45	28.20.28	29.57.9	31.33.47	33.10.23	34.46.55	36.23.23	37.59.44	33.10.23	34.46.55	36.23.23	37.59.44	39.36.1	41.12.10	42.48.11	44.24.5
	30	39.36.1	41.12.10	42.48.11	44.24.5	45.59.51	47.35.28	49.10.56	50.46.15	45.59.51	47.35.28	49.10.56	50.46.15	52.21.23	54.0.0	55.42.38	57.28.0
	O.1	52.21.23	54.0.0	55.42.38	57.28.0	59.9.0	60.54.54	62.32.58	64.10.53	59.9.0	60.54.54	62.32.58	64.10.53	66.0.0	67.42.38	69.24.0	71.6.15

CONFIGURATIONS of the SATELLITES of JUPITER  
at VII o'Clock in the *Evening*.

1		3.		○	.1	2.		.4
2			.3	2.	1.	○		.4
3	3.○			.2	○	.1		
4				.1	○		.2	.3
5					○	2.	1.	4.
6				2.	4.	.1	○	3.
7	1.●		4.		3.	○	.2	
8		4.		3.		○	.1	2.
9	4.		.3	2.	1.	○		
10	.4			.2	.3	○	.1	
11	.4			.1	○		.2	.3
12		.4			○	2	1.	.3
13			2.	.4	.1	○		3.
14	2.○ 4.○			3.	○	1.		
15	1.○		3.		○		2.	.4

Configurations at Half an Hour past VI P. M.

16		.3		2	1.	○		.4
17			.2	.3	○	.1		.4
18				1.	○	2	○ 3	.4
19					○	1	○ 2	.3
20			2.	.1	○		3.	4.
21	3.●			.2	○	1.		4.
22			3.		.1	○	4.	2.
23	1.● 2.●	.3		4.	○			
24		4.		2	○ 3	○	.1	
25		4.		1	○	2	○ 3	
26	4.				○	.1	2.	.3
27	.4			2.	.1	○		3.
28		.4			.2	○	3.	1.
29		.4		3.	.1	○		.2
30	1.● 2.●	.3		.4	○			

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			● New Moon ----- 3. 5. 57
			☾ First Quarter ----- 11. 10. 18
			○ Full Moon ----- 18. 13. 17
			☾ Last Quarter ----- 25. 4. 10
			Other Phenomena.
			D. H. M.
			7. 9. 14 ☾ π ♀
			7. 19. 6 ☾ σ ♀
			7. 23. 5 ☾ α ♀
			10. 4. 53 ☾ λ ♀
			13. - - ♀ ρ ♀, * 51' N.
			14. 17. 27 ☾ θ ♀
			15. - - ♀ Stationary.
			18. 11. 7 ☾ η *
			20. 16. 8½ I. of η Pleiad. * 1½ S.
			20. 17. 15½ E. * 1½ N.
			N.B. ☾ occults others.
			21. - - 24 α ♀, * 33' S.
			22. 8. 0 Im. of 1258, * 15½ N.
			22. 8. 15 Em. of 1258, * 15½ N.
			23. 2. 48 ☾ enters ♀
			23. 9. 10 ☾ ε ♀
			25. 11. 12 ☾ δ ♀
M.	1	Remigius.	
Tu.	2		
W.	3		
Th.	4		
F.	5		
Sa.	6	Faith.	
Sun.	7	19th Sun. after Trinity.	
M.	8		
Tu.	9	St. Denys	
W.	10	Oxf. and Camb. T. beg.	
Th.	11		
F.	12		
Sa.	13	Transl. of K. Edw. Conf.	
Sun.	14	20th Sun. after Trinity.	
M.	15		
Tu.	16		
W.	17	Etheldred.	
Th.	18	St. Luke.	
F.	19		
Sa.	20		
Sun.	21	21st Sun. after Trinity.	
M.	22		
Tu.	23		
W.	24		
Th.	25	K. Geo. III. Accf. Crisp.	
F.	26	K. Geo. III. Procl. 1760.	
Sa.	27		
Sun.	28	22d Sunday after Trinity.	
M.	29	[St. Simon and St. Jude.	
Tu.	30		
W.	31		



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M	1	6. 8. 4. 31	12. 29. 39, 7	3. 12. 24	10. 21, 2	18, 7
Tu.	2	6. 9. 3. 40	12. 33. 17, 4	3. 35. 43	10. 39, 9	18, 4
W.	3	6. 10. 2. 50	12. 36. 55, 5	3. 59. 1	10. 58, 3	18, 1
Th.	4	6. 11. 2. 3	12. 40. 34, 0	4. 22. 15	11. 16, 4	17, 7
F.	5	6. 12. 1. 18	12. 44. 12, 7	4. 45. 26	11. 34, 1	17, 4
Sa.	6	6. 13. 0. 35	12. 47. 51, 9	5. 8. 34	11. 51, 5	17, 0
Sun.	7	6. 13. 59. 54	12. 51. 31, 4	5. 31. 38	12. 8, 5	16, 6
M.	8	6. 14. 59. 14	12. 55. 11, 3	5. 54. 38	12. 25, 1	16, 1
Tu.	9	6. 15. 58. 36	12. 58. 51, 7	6. 17. 32	12. 41, 2	15, 8
W.	10	6. 16. 58. 1	13. 2. 32, 5	6. 40. 22	12. 57, 0	15, 3
Th.	11	6. 17. 57. 27	13. 6. 13, 7	7. 3. 6	13. 12, 3	14, 8
F.	12	6. 18. 56. 54	13. 9. 55, 4	7. 25. 45	13. 27, 1	14, 3
Sa.	13	6. 19. 56. 23	13. 13. 37, 5	7. 48. 17	13. 41, 4	13, 8
Sun.	14	6. 20. 55. 54	13. 17. 20, 2	8. 10. 42	13. 55, 2	13, 3
M.	15	6. 21. 55. 27	13. 21. 3, 4	8. 33. 1	14. 8, 5	12, 8
Tu.	16	6. 22. 55. 2	13. 24. 47, 2	8. 55. 12	14. 21, 3	12, 2
W.	17	6. 23. 54. 38	13. 28. 31, 5	9. 17. 16	14. 33, 5	11, 6
Th.	18	6. 24. 54. 17	13. 32. 16, 4	9. 39. 11	14. 45, 1	11, 0
F.	19	6. 25. 53. 57	13. 36. 2, 0	10. 0. 58	14. 56, 1	10, 4
Sa.	20	6. 26. 53. 39	13. 39. 48, 1	10. 22. 36	15. 6, 5	9, 7
Sun.	21	6. 27. 53. 24	13. 43. 35, 0	10. 44. 5	15. 16, 2	9, 0
M.	22	6. 28. 53. 11	13. 47. 22, 5	11. 5. 25	15. 25, 2	8, 4
Tu.	23	6. 29. 53. 0	13. 51. 10, 6	11. 26. 35	15. 35, 6	7, 6
W.	24	7. 0. 52. 51	13. 54. 59, 6	11. 47. 34	15. 41, 2	6, 9
Th.	25	7. 1. 52. 45	13. 58. 49, 2	12. 8. 23	15. 48, 1	6, 2
F.	26	7. 2. 52. 40	14. 2. 39, 6	12. 29. 1	15. 54, 3	5, 4
Sa.	27	7. 3. 52. 39	14. 6. 30, 7	12. 49. 27	15. 59, 7	4, 6
Sun.	28	7. 4. 52. 39	14. 10. 22, 6	13. 9. 41	16. 4, 3	3, 8
M.	29	7. 5. 52. 42	14. 14. 15, 3	13. 29. 43	16. 8, 1	3, 1
Tu.	30	7. 6. 52. 47	14. 18. 8, 8	13. 49. 33	16. 11, 2	2, 3
W.	31	7. 7. 52. 54	14. 22. 3, 1	14. 9. 9	16. 13, 5	

Days	Time of $\odot$ 's Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4, 3	16. 2, 6	2. 27, 7	0.000094	10. 1. 23
7	1. 4, 6	16. 4, 3	2. 28, 3	9.999340	10. 1. 4
13	1. 5, 0	16. 5, 9	2. 28, 8	9.998572	10. 0. 45
19	1. 5, 5	16. 7, 5	2. 29, 2	9.997823	10. 0. 26
25	1. 6, 1	16. 9, 2	2. 29, 7	9.997124	10. 0. 7

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	3.58.54	3	23. 0.34	5	16.52.29 Im.
3	22.28. 0	7	12.20.12	5	18.46.38 E.
5	16.57. 2				
7	11.26. 5				
9	5.55. 4				
IV. Satellite. Conj.					
				1	2.25½ Inf.
				9	12.10½ Sup.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passag: Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♄ Gr. Elong. 22 <i>M E R C U R Y.</i> 1. 1. 60 <sup>h</sup> . 22 <sup>h</sup> .							
1	11. 15. 19	6. 7 S	6. 20. 14	3. 20 S	11. 0 S	0. 4	
4	11. 29. 8	5. 7	6. 17. 20	2. 44	9. 21	0. 19	
7	0. 14. 17	3. 42	6. 13. 51	1. 53	7. 12	23. 49	
10	1. 0. 47	1. 51 S	6. 10. 32	0. 52 S	4. 59	23. 28	
13	1. 18. 30	0. 18 N	6. 8. 14	0. 8 N	3. 9	23. 13	
16	2. 7. 7	2. 32	6. 7. 27	0. 58	2. 4	23. 2	
19	2. 26. 3	4. 31	6. 8. 19	1. 35	1. 51	22. 56	
22	3. 14. 39	5. 59	6. 10. 35	1. 57	2. 24	22. 55	
25	4. 2. 20	6. 48	6. 13. 53	2. 7	3. 32	22. 57	
28	4. 18. 44	7. 0	6. 17. 54	2. 7	5. 5	23. 0	
31	5. 3. 41	6. 40	6. 22. 20	2. 0	6. 51	23. 5	
♀ Gr. Elong. 14 <sup>d</sup> . <i>V E N U S.</i>							
1	1. 14. 7	1. 44 S	4. 22. 27	2. 7 S	12. 3 N	21. 7	
7	1. 23. 44	1. 14	4. 27. 51	1. 23	10. 56	21. 7	
13	2. 3. 23	0. 41	5. 3. 35	0. 43	9. 32	21. 7	
19	2. 13. 2	0. 7 S	5. 9. 36	0. 7 S	7. 52	21. 8	
25	2. 22. 43	0. 28 N	5. 15. 52	0. 26 N	5. 58	21. 10	
♂ <i>M A R S.</i> ☐ 28 <sup>d</sup> . 17 <sup>h</sup> .							
1	2. 12. 28	0. 46 N	3. 21. 45	0. 49 N	22. 31 N	19. 4	
7	2. 15. 32	0. 51	3. 24. 59	0. 57	22. 5	18. 56	
13	2. 18. 35	0. 56	3. 28. 6	1. 5	21. 38	18. 47	
19	2. 21. 35	1. 1	4. 1. 5	1. 14	21. 8	18. 37	
25	2. 24. 34	1. 6	4. 3. 56	1. 23	20. 38	18. 26	
♃ <i>J U P I T E R.</i>							
1	7. 13. 26	1. 5 N	7. 8. 8	0. 57 N	13. 20 S	1. 54	
7	7. 13. 54	1. 5	7. 9. 22	0. 56	13. 45	1. 37	
13	7. 14. 21	1. 5	7. 10. 37	0. 55	14. 9	1. 20	
19	7. 14. 49	1. 4	7. 11. 55	0. 55	14. 33	1. 3	
25	7. 15. 17	1. 4	7. 13. 13	0. 54	14. 58	0. 45	
♄ <i>S A T U R N.</i>							
1	6. 6. 44	2. 25 N	6. 6. 52	2. 11 N	0. 43 S	23. 50	
7	6. 6. 56	2. 25	6. 7. 36	2. 12	1. 0	23. 37	
13	6. 7. 8	2. 25	6. 8. 20	2. 12	1. 17	23. 17	
19	6. 7. 20	2. 25	6. 9. 4	2. 12	1. 34	22. 58	
25	6. 7. 32	2. 26	6. 9. 46	2. 13	1. 50	22. 37	
♄ <i>G E O R G I A N.</i> ☐ 10. 4 <sup>h</sup> .							
1	6. 17. 1	0. 38 N	6. 16. 33	0. 36 N	5. 57 S	0. 32	
11	6. 17. 9	0. 38	6. 17. 12	0. 36	6. 12	23. 55	
21	6. 17. 17	0. 38	6. 17. 50	0. 36	6. 27	23. 20	

		THE MOON'S							
		Longitude.				Latitude.			
Days of the Week.	Days of the Month.	Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
M.	1	5. 12. 2. 29		5. 18. 24. 3		3. 11. 50 S		3. 36. 37 S	
Tu.	2	5. 24. 43. 0		6. 0. 59. 22		3. 58. 33		4. 17. 24	
W.	3	6. 7. 13. 8		6. 13. 24. 24		4. 32. 59		4. 45. 13	
Th.	4	6. 19. 33. 10		6. 25. 39. 29		4. 54. 3		4. 59. 25	
F.	5	7. 1. 43. 30		7. 7. 45. 18		5. 1. 21		4. 59. 53	
Sa.	6	7. 13. 45. 4		7. 19. 43. 4		4. 55. 7		4. 47. 6	
Sun.	7	7. 25. 39. 35		8. 1. 34. 57		4. 36. 1		4. 21. 57	
M.	8	8. 7. 29. 35		8. 13. 23. 54		4. 5. 6		3. 45. 36	
Tu.	9	8. 19. 18. 28		8. 25. 13. 48		3. 23. 40		2. 59. 27	
W.	10	9. 1. 10. 29		9. 7. 9. 10		2. 33. 11		2. 5. 4	
Th.	11	9. 13. 10. 27		9. 19. 15. 3		1. 35. 20		1. 4. 15 S	
F.	12	9. 25. 23. 39		10. 1. 36. 54		0. 32. 5 S		0. 0. 53 N	
Sa.	13	10. 7. 55. 25		10. 14. 19. 50		0. 34. 16 N		1. 7. 44	
Sun.	14	10. 20. 50. 42		10. 27. 28. 24		1. 40. 50		2. 13. 8	
M.	15	11. 4. 13. 19		11. 11. 5. 35		2. 44. 7		3. 13. 15	
Tu.	16	11. 18. 5. 11		11. 25. 11. 57		3. 39. 59		4. 3. 45	
W.	17	0. 2. 25. 26		0. 9. 45. 2		4. 23. 58		4. 40. 8	
Th.	18	0. 17. 9. 53		0. 24. 38. 53		4. 51. 47		4. 58. 32	
F.	19	1. 2. 10. 54		1. 9. 44. 37		5. 0. 11		4. 56. 34	
Sa.	20	1. 17. 18. 43		1. 24. 51. 52		4. 47. 45		4. 33. 55	
Sun.	21	2. 2. 22. 53		2. 9. 50. 41		4. 15. 22		3. 52. 33	
M.	22	2. 17. 14. 17		2. 24. 33. 2		3. 26. 0		2. 56. 18	
Tu.	23	3. 1. 46. 25		3. 8. 54. 3		2. 24. 4		1. 49. 59	
W.	24	3. 15. 55. 51		3. 22. 57. 46		1. 14. 38		0. 38. 38 N	
Th.	25	3. 29. 41. 59		4. 6. 26. 42		0. 2. 33 N		0. 33. 4 S	
F.	26	4. 13. 6. 14		4. 19. 40. 57		1. 7. 47 S		1. 41. 9	
Sa.	27	4. 26. 11. 13		5. 2. 37. 26		2. 12. 48		2. 42. 23	
Sun.	28	5. 8. 59. 57		5. 15. 19. 10		3. 9. 37		3. 34. 14	
M.	29	5. 21. 35. 22		5. 27. 48. 52		3. 56. 1		4. 14. 49	
Tu.	30	6. 3. 59. 55		6. 10. 8. 46		4. 30. 27		4. 42. 49	
W.	31	6. 16. 15. 32		6. 22. 20. 28		4. 51. 51		4. 57. 30	

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
M.	1	29	22. 59	162. 13	167. 55	4. 6 N	1. 16 N
Tu.	2	30	23. 42	173. 34	179. 12	1. 33 S	4. 20 S
W.	3	1	0	184. 49	190. 28	7. 3	9. 40
Th.	4	2	0. 25	196. 9	201. 54	12. 11	14. 34
F.	5	3	1. 9	207. 45	213. 41	16. 47	18. 50
Sa.	6	4	1. 55	219. 43	225. 52	20. 40	22. 17
Sun.	7	5	2. 42	232. 8	238. 30	23. 40	24. 47
M.	8	6	3. 32	244. 57	251. 29	25. 37	26. 10
Tu.	9	7	4. 22	258. 4	264. 41	26. 25	26. 22
W.	10	8	5. 13	271. 18	277. 55	26. 1	25. 21
Th.	11	9	6. 4	284. 29	291. 0	24. 24	23. 9
F.	12	10	6. 53	297. 28	303. 52	21. 37	19. 48
Sa.	13	11	7. 42	310. 11	316. 28	17. 45	15. 28
Sun.	14	12	8. 30	322. 42	328. 54	12. 58	10. 17
M.	15	13	9. 17	335. 6	341. 20	7. 25	4. 25 S
Tu.	16	14	10. 6	347. 37	353. 59	1. 20 S	1. 49 N
W.	17	15	10. 56	0. 28	7. 6	5. 0 N	8. 9
Th.	18	16	11. 50	13. 55	20. 57	11. 14	14. 11
F.	19	17	12. 47	28. 12	35. 41	16. 56	19. 26
Sa.	20	18	13. 48	43. 23	51. 18	21. 37	23. 26
Sun.	21	19	14. 52	59. 23	67. 33	24. 50	25. 47
M.	22	20	15. 56	75. 46	83. 56	26. 16	26. 17
Tu.	23	21	16. 58	91. 58	99. 50	25. 51	25. 0
W.	24	22	17. 55	107. 27	114. 48	23. 45	22. 10
Th.	25	23	18. 48	121. 53	128. 42	20. 17	18. 9
F.	26	24	19. 36	135. 14	141. 33	15. 49	13. 20
Sa.	27	25	20. 21	147. 40	153. 37	10. 43	8. 1
Sun.	28	26	21. 4	159. 25	165. 6	5. 16 N	2. 30 N
M.	29	27	21. 46	170. 44	176. 18	0. 17 S	3. 2 S
Tu.	30	28	22. 28	181. 52	187. 27	5. 44	8. 21
W.	31	29	23. 11	193. 4	198. 46	10. 53	13. 18

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
M.	1	15. 19	15. 15	56. 14	55. 59	5053	5072
Tu.	2	15. 11	15. 8	55. 45	55. 32	5090	5107
W.	3	15. 4	15. 1	55. 19	55. 7	5124	5140
Th.	4	14. 58	14. 55	54. 56	54. 45	5154	5169
F.	5	14. 53	14. 51	54. 36	54. 28	5181	5191
Sa.	6	14. 49	14. 47	54. 21	54. 16	5201	5207
Sun.	7	14. 46	14. 46	54. 13	54. 12	5211	5213
M.	8	14. 46	14. 47	54. 12	54. 14	5213	5210
Tu.	9	14. 48	14. 50	54. 20	54. 27	5202	5193
W.	10	14. 53	14. 56	54. 37	54. 49	5179	5163
Th.	11	15. 0	15. 5	55. 4	55. 21	5144	5122
F.	12	15. 10	15. 16	55. 41	56. 3	5095	5067
Sa.	13	15. 23	15. 30	56. 27	56. 53	5036	5003
Sun.	14	15. 37	15. 45	57. 20	57. 48	4968	4933
M.	15	15. 53	16. 0	58. 16	58. 44	4898	4864
Tu.	16	16. 8	16. 15	59. 12	59. 38	4830	4798
W.	17	16. 21	16. 27	60. 1	60. 22	4770	4745
Th.	18	16. 32	16. 36	60. 40	60. 54	4723	4707
F.	19	16. 38	16. 40	61. 3	61. 8	4696	4690
Sa.	20	16. 40	16. 39	61. 9	61. 5	4689	4693
Sun.	21	16. 36	16. 33	60. 57	60. 45	4703	4717
M.	22	16. 29	16. 24	60. 30	60. 12	4735	4757
Tu.	23	16. 19	16. 13	59. 52	59. 31	4781	4806
W.	24	16. 7	16. 1	59. 8	58. 45	4834	4863
Th.	25	15. 54	15. 48	58. 21	57. 58	4892	4921
F.	26	15. 41	15. 35	57. 35	57. 13	4950	4977
Sa.	27	15. 30	15. 25	56. 52	56. 33	5004	5028
Sun.	28	15. 19	15. 14	56. 14	55. 56	5053	5076
M.	29	15. 10	15. 6	55. 40	55. 26	5097	5115
Tu.	30	15. 3	14. 59	55. 13	55. 1	5132	5148
W.	31	14. 56	14. 54	54. 49	54. 40	5163	5175

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Aquilæ.	5	90. 6. 12	88. 47. 34	87. 29. 4	86. 10. 42	84. 52. 29	83. 34. 25	82. 16. 32	80. 58. 49
	6	79. 41. 17	78. 23. 56	77. 67. 48	75. 49. 52	74. 33. 10	73. 16. 41	72. 0. 28	70. 44. 31
	7	69. 28. 49	68. 13. 25	66. 58. 18	65. 43. 30	64. 29. 2			
Fomalhaut.	7	- - -	- - -	- - -	- - -	87. 59. 43	86. 38. 33	85. 17. 25	83. 56. 20
	8	82. 35. 18	81. 14. 19	79. 53. 23	78. 32. 31	77. 11. 42	75. 50. 56	74. 30. 14	73. 9. 36
	9	71. 49. 2	70. 28. 32	69. 8. 7	67. 47. 48	66. 27. 34	65. 7. 25	63. 47. 24	62. 27. 30
	10	61. 7. 44	59. 48. 5	58. 28. 36	57. 9. 19	55. 50. 13	54. 31. 21	53. 12. 43	51. 54. 22
	11	50. 36. 17							
α Pegasi.	11	69. 30. 35	68. 3. 21	66. 35. 57	65. 8. 25	63. 40. 44	62. 12. 55	60. 44. 58	59. 16. 53
	12	57. 48. 41	56. 20. 20	54. 51. 54	53. 23. 22	51. 54. 44	50. 26. 2	48. 57. 17	47. 28. 29
	13	45. 59. 39							
	13	86. 57. 48	85. 22. 16	83. 46. 22	82. 10. 5	80. 33. 25	78. 56. 22	77. 18. 54	75. 41. 3
α Arietis.	14	74. 2. 48	72. 24. 9	70. 45. 4	69. 5. 35	67. 25. 41	65. 45. 21	64. 4. 35	62. 23. 25
	15	60. 41. 49	58. 59. 48	57. 17. 22	55. 34. 31	53. 51. 16	52. 7. 36	50. 23. 33	48. 39. 5
	16	46. 54. 13							
	16	79. 24. 45	77. 40. 16	75. 55. 24	74. 10. 10	72. 24. 34	70. 38. 35	68. 52. 17	67. 5. 39
Aldebaran.	17	65. 18. 41	63. 31. 24	61. 43. 51	59. 56. 3	58. 7. 59	56. 19. 40	54. 31. 12	52. 42. 34
	18	50. 53. 47	49. 4. 51	47. 15. 54	45. 26. 55	43. 37. 55	41. 48. 53	40. 0. 2	38. 11. 21

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
Aldebaran.	19	36. 22. 50		34. 34. 28		32. 46. 38		30. 59. 20		29. 12. 34		27. 26. 38		25. 41. 36		23. 57. 35	
	20	22. 14. 41															
Pollux.	20	62. 53. 49		61. 1. 29		59. 9. 14		57. 17. 5		55. 25. 5		53. 33. 13		51. 41. 33		49. 50. 4	
	21	47. 58. 47		46. 7. 43		44. 16. 57		42. 26. 27		40. 36. 15		38. 46. 23		36. 56. 54		35. 7. 49	
Regulus.	22	33. 19. 7															
	22	69. 53. 29		68. 3. 25		66. 13. 38		64. 24. 10		62. 35. 0		60. 46. 9		58. 57. 37		57. 9. 26	
	23	55. 21. 34		53. 34. 4		51. 46. 55		50. 0. 7		48. 13. 40		46. 27. 35		44. 41. 52		42. 56. 31	
	24	41. 11. 32		39. 26. 56		37. 42. 42		35. 58. 52		34. 15. 24		32. 32. 19		30. 49. 38		29. 7. 20	
The Sun.	25	27. 25. 25															
	22													121. 25. 19		119. 44. 59	
	23	118. 4. 58		116. 25. 16		114. 45. 54		113. 6. 52		111. 28. 10		109. 49. 48		108. 11. 47		106. 34. 7	
	24	104. 56. 47		103. 19. 49		101. 43. 12		100. 6. 55		98. 31. 0		96. 55. 25		95. 20. 12		93. 45. 18	
	25	92. 10. 46		90. 36. 34		89. 2. 43		87. 29. 12		85. 56. 1		84. 23. 10		82. 50. 38		81. 18. 26	
	26	79. 46. 33		78. 14. 59		76. 43. 44		75. 12. 47		73. 42. 9		72. 11. 48		70. 41. 45		69. 11. 58	
	27	67. 42. 29		66. 13. 17		64. 44. 21		63. 15. 41		61. 47. 17		60. 19. 9		58. 51. 15		57. 23. 37	
	28	55. 56. 14		54. 29. 6		53. 2. 12		51. 35. 32		50. 9. 6		48. 42. 54		47. 16. 55		45. 51. 10	
	29	44. 25. 38		43. 0. 19		41. 35. 14		40. 10. 22		38. 45. 42							



*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	15. 21. 30		16. 56. 2		18. 30. 33		20. 4. 59		21. 39. 22		23. 13. 41		24. 47. 53		26. 21. 59	
	2	27. 55. 59															
The Sun.	6	-	-	-	-	-	-	-	-	-	-	-	-	39. 10. 41		40. 31. 25	
	7	41. 52. 6		43. 12. 46		44. 33. 25		45. 54. 2		47. 14. 39		48. 35. 15		49. 55. 51		51. 16. 27	
	8	52. 37. 3		53. 57. 39		55. 18. 17		56. 38. 56		57. 59. 37		59. 20. 21		60. 41. 8		62. 1. 59	
	9	63. 22. 53		64. 43. 51		66. 4. 55		67. 26. 4		68. 47. 18		70. 8. 39		71. 30. 7		72. 51. 43	
	10	74. 13. 26		75. 35. 18		76. 57. 19		78. 19. 30		79. 41. 51		81. 4. 22		82. 27. 5		83. 50. 0	
	11	85. 13. 7		86. 36. 27		88. 0. 0		89. 23. 49		90. 47. 51		92. 12. 10		93. 36. 45		95. 1. 36	
	12	96. 26. 44		97. 52. 9		99. 17. 53		100. 43. 55		102. 10. 15		103. 36. 55		105. 3. 56		106. 31. 17	
	13	107. 58. 59		109. 27. 2		110. 55. 27		112. 24. 14		113. 53. 23		115. 22. 56		116. 52. 52		118. 23. 12	
	14	119. 53. 56															
	11	-	-	-	-	-	-	-	-	42. 17. 47		43. 49. 51		45. 22. 11		46. 54. 49	
	12	48. 27. 43		50. 0. 55		51. 34. 26		53. 8. 16		54. 42. 24		56. 16. 52		57. 51. 41		59. 26. 51	
	13	61. 2. 22		62. 38. 15		64. 14. 31		65. 51. 10		67. 28. 11		69. 5. 37		70. 43. 26		72. 21. 41	
	14	74. 0. 19		75. 39. 22		77. 18. 51		78. 58. 45		80. 39. 5		82. 19. 51		84. 1. 4		85. 42. 42	
	15	87. 24. 47		89. 7. 19		90. 50. 17		92. 33. 41		94. 17. 31		96. 1. 47		97. 46. 29		99. 31. 37	
	16	101. 17. 11															
Antares.	12	48. 27. 43		50. 0. 55		51. 34. 26		53. 8. 16		54. 42. 24		56. 16. 52		57. 51. 41		59. 26. 51	
	13	61. 2. 22		62. 38. 15		64. 14. 31		65. 51. 10		67. 28. 11		69. 5. 37		70. 43. 26		72. 21. 41	
	14	74. 0. 19		75. 39. 22		77. 18. 51		78. 58. 45		80. 39. 5		82. 19. 51		84. 1. 4		85. 42. 42	
	15	87. 24. 47		89. 7. 19		90. 50. 17		92. 33. 41		94. 17. 31		96. 1. 47		97. 46. 29		99. 31. 37	
	16	101. 17. 11															
	17																

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
$\alpha$ Aquilæ.	16	53.	1. 41	54. 25. 50	55. 51. 8	57. 17. 32	58. 45. 0	57. 17. 32	58. 45. 0	60. 13. 29	61. 42. 52	60. 13. 29	61. 42. 52	63. 13. 9	63. 13. 9	63. 13. 9	63. 13. 9
	17	64. 44. 19	66. 16. 15	67. 48. 53	69. 22. 12	70. 56. 13	72. 30. 49	70. 56. 13	72. 30. 49	74. 5. 55	75. 41. 32	72. 30. 49	74. 5. 55	75. 41. 32	75. 41. 32	75. 41. 32	75. 41. 32
	18	77. 17. 40	78. 54. 12	80. 31. 6	82. 8. 20	83. 45. 52	84. 4. 12	82. 8. 20	83. 45. 52	84. 4. 12	85. 51. 54	84. 4. 12	85. 51. 54	86. 27. 20	86. 27. 20	86. 27. 20	86. 27. 20
$\alpha$ Pegasi.	18	-	-	-	-	-	-	-	-	36. 0. 22	37. 40. 57	36. 0. 22	37. 40. 57	41. 4. 57	41. 4. 57	41. 4. 57	41. 4. 57
	19	48. 48. 13	44. 32. 15	46. 16. 53	48. 2. 5	49. 47. 52	51. 34. 0	48. 2. 5	49. 47. 52	51. 34. 0	53. 20. 28	51. 34. 0	53. 20. 28	55. 7. 14	55. 7. 14	55. 7. 14	55. 7. 14
	20	56. 54. 20	58. 41. 36	60. 29. 0	62. 16. 32	64. 4. 12	65. 51. 54	62. 16. 32	64. 4. 12	65. 51. 54	67. 39. 38	65. 51. 54	67. 39. 38	69. 27. 20	69. 27. 20	69. 27. 20	69. 27. 20
	21	71. 14. 58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
$\alpha$ Arietis.	21	27. 48. 19	29. 38. 38	31. 28. 56	33. 19. 9	35. 9. 18	36. 59. 21	33. 19. 9	35. 9. 18	36. 59. 21	38. 49. 14	36. 59. 21	38. 49. 14	40. 38. 58	40. 38. 58	40. 38. 58	40. 38. 58
	22	42. 28. 32	44. 17. 52	46. 6. 57	47. 55. 48	49. 44. 25	51. 32. 45	47. 55. 48	49. 44. 25	51. 32. 45	53. 20. 48	51. 32. 45	53. 20. 48	55. 8. 34	55. 8. 34	55. 8. 34	55. 8. 34
	23	56. 56. 0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aldebaran.	23	25. 54. 8	27. 34. 28	29. 15. 9	30. 56. 7	32. 37. 20	34. 18. 45	30. 56. 7	32. 37. 20	34. 18. 45	36. 0. 13	34. 18. 45	36. 0. 13	37. 41. 44	37. 41. 44	37. 41. 44	37. 41. 44
	24	39. 23. 18	41. 4. 42	42. 45. 58	44. 27. 7	46. 8. 8	47. 48. 56	44. 27. 7	46. 8. 8	47. 48. 56	49. 29. 31	47. 48. 56	49. 29. 31	51. 9. 54	51. 9. 54	51. 9. 54	51. 9. 54
	25	52. 50. 4	54. 29. 59	56. 9. 38	57. 49. 3	59. 28. 13	61. 7. 7	57. 49. 3	59. 28. 13	61. 7. 7	62. 45. 45	61. 7. 7	62. 45. 45	64. 24. 7	64. 24. 7	64. 24. 7	64. 24. 7
	26	66. 2. 14	67. 40. 4	69. 17. 39	70. 54. 58	72. 32. 1	74. 8. 49	70. 54. 58	72. 32. 1	74. 8. 49	75. 45. 20	74. 8. 49	75. 45. 20	77. 21. 37	77. 21. 37	77. 21. 37	77. 21. 37
	27	78. 57. 37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pollux.	27	36. 40. 42	38. 16. 30	39. 52. 7	41. 27. 33	43. 2. 48	44. 37. 52	41. 27. 33	43. 2. 48	44. 37. 52	46. 12. 46	44. 37. 52	46. 12. 46	47. 47. 28	47. 47. 28	47. 47. 28	47. 47. 28
	28	49. 21. 59	50. 56. 19	52. 30. 28	54. 4. 26	55. 38. 13	57. 11. 49	54. 4. 26	55. 38. 13	57. 11. 49	58. 45. 15	57. 11. 49	58. 45. 15	60. 18. 30	60. 18. 30	60. 18. 30	60. 18. 30
	29	61. 51. 35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regulus.	29	24. 50. 32	26. 23. 30	27. 56. 19	29. 29. 1	31. 1. 35	32. 34. 1	29. 29. 1	31. 1. 35	32. 34. 1	34. 6. 19	32. 34. 1	34. 6. 19	35. 38. 29	35. 38. 29	35. 38. 29	35. 38. 29
	30	37. 10. 31	38. 42. 25	40. 14. 12	41. 45. 50	43. 17. 21	44. 48. 44	41. 45. 50	43. 17. 21	44. 48. 44	46. 20. 0	44. 48. 44	46. 20. 0	47. 51. 8	47. 51. 8	47. 51. 8	47. 51. 8
	31	49. 22. 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CONFIGURATIONS of the SATELLITES of JUPITER  
at VI o'Clock in the *Evening*.

1		2 6 3	○ 1 6 4	
2			○ 2 6 3	.4
3			○	.1 2. .3 .4
4		1 6 2	○	3. .4
5		.2	○	3. 1. .4
6		3. .1	○	.2 .4
7		3.	○ 1 6 2	4.
8	1. ○	.3 2.	○	4.
9	3. ○		○ .2	4.
10		4.	○ .1 2. .3	

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			● New Moon - - - 1. 22. 50
			☾ First Quarter - - - 10. 3. 19
			○ Full Moon - - - 16. 23. 1
			☾ Last Quarter - - - 23. 16. 21
			Other Phenomena.
			D. H. M.
			1. - - ♀ β η, * 20' S.
			6. 11. 41 ☾ λ †
			8. - - ♀ η η, * 4' S.
			11. 2. 33 ☾ θ ∞
			14. 22. 16 ☾ η ✕
			17. 2. 40 ☾ η Pleiadum.
			17. - - ♀ ζ, ♀ 24½ S.
			18. 18. 42 ☾ ι 5 ♀
			19. 18. 3 ☾ ι π
			20. 8. 8 ☾ δ π
			20. - - ♀ θ η, * 11' S.
			21. 23. 5 ☉ enters †
			22. 17. 8 ☾ ξ Ω
			25. 7. 2 ☾ υ Ω
Th. r. Sa.	1 2 3	All Saints. D. of Kent b. [Souls 1 r. Prs. Soph. b. On m. of all	
Sun. M. Tu. W. Th. F. Sa.	4 5 6 7 8 9 10	23d Sun. after Trinity. Powder Plot, 1605. Leon <sup>d</sup> . Mich. Term beg. Prs. Aug. Sophia born.	
Sun. M. Tu. W. Th. F. Sa.	11 12 13 14 15 16 17	24th Su. aft. Tr. St. Mart. On mor. of St. M. 2 r C. Britius. [T. div. m. Machutus. Hugh Bp. of Lincoln.	
Sun. M. Tu. W. Th. F. Sa.	18 19 20 21 22 23 24	25th Sunday after Trinity. In 8 days of St. Mart. 3 ret. Edmund K. and Martyr. Cecilia. St. Clement.	
Sun. M. Tu. W. Th. F.	25 26 27 28 29 30	26th Su. aft. Tr. D. of Glo. [ b. Cath. In 15 d. of St. [ Mart. 4 ret. Mich. Term ends. St. Andrew.	

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	7. 8 53. 3	14. 25. 58, 2	14. 28. 31	16. 14, 9	0, 7
F.	2	7. 9 53. 15	14. 29. 54, 1	14. 47. 40	16. 15, 6	0, 2
Sa.	3	7. 10. 53. 28	14. 33. 50, 8	15. 6. 34	16. 15, 4	0, 9
Sun.	4	7. 11. 53. 42	14. 37. 48, 3	15. 25. 13	16. 14, 5	1, 8
M.	5	7. 12. 53. 59	14. 41. 46, 6	15. 43. 37	16. 12, 7	2, 6
Tu.	6	7. 13. 54. 17	14. 45. 45, 8	16. 1. 45	16. 10, 1	3, 4
W.	7	7. 14. 54. 37	14. 49. 45, 8	16. 19. 37	16. 6, 7	4, 3
Th.	8	7. 15. 54. 58	14. 53. 46, 6	16. 37. 13	16. 2, 4	5, 0
F.	9	7. 16. 55. 20	14. 57. 48, 2	16. 54. 31	15. 57, 4	5, 9
Sa.	10	7. 17. 55. 44	15. 1. 50, 7	17. 11. 32	15. 51, 5	6, 7
Sun.	11	7. 18. 56. 9	15. 5. 54, 0	17. 28. 16	15. 44, 8	7, 5
M.	12	7. 19. 56. 36	15. 9. 58, 1	17. 44. 41	15. 37, 3	8, 4
Tu.	13	7. 20. 57. 3	15. 14. 3, 0	18. 0. 47	15. 28, 9	9, 2
W.	14	7. 21. 57. 33	15. 18. 8, 8	18. 16. 35	15. 19, 7	10, 0
Th.	15	7. 22. 58. 3	15. 22. 15, 4	18. 32. 3	15. 9, 7	10, 9
F.	16	7. 23. 58. 35	15. 26. 22, 9	18. 47. 12	14. 58, 8	11, 7
Sa.	17	7. 24. 59. 9	15. 30. 31, 1	19. 2. 0	14. 47, 1	12, 5
Sun.	18	7. 25. 59. 44	15. 34. 40, 2	19. 16. 28	14. 34, 6	13, 4
M.	19	7. 27. 0. 21	15. 38. 50, 2	19. 30. 36	14. 21, 2	14, 2
Tu.	20	7. 28. 0. 59	15. 43. 1, 0	19. 44. 22	14. 7, 0	15, 0
W.	21	7. 29. 1. 39	15. 47. 12, 6	19. 57. 47	13. 52, 0	15, 8
Th.	22	8. 0. 2. 20	15. 51. 25, 0	20. 19. 49	13. 36, 2	16, 7
F.	23	8. 1. 3. 4	15. 55. 38, 3	20. 23. 30	13. 19, 5	17, 4
Sa.	24	8. 2. 3. 49	15. 59. 52, 3	20. 35. 48	13. 2, 1	18, 2
Sun.	25	8. 3. 4. 35	16. 4. 7, 2	20. 47. 43	12. 43, 9	19, 0
M.	26	8. 4. 5. 24	16. 8. 22, 8	20. 59. 15	12. 24, 9	19, 8
Tu.	27	8. 5. 6. 14	16. 12. 39, 2	21. 10. 23	12. 5, 1	20, 5
W.	28	8. 6. 7. 5	16. 16. 56, 3	21. 21. 7	11. 44, 6	21, 2
Th.	29	8. 7. 7. 58	16. 21. 14, 1	21. 31. 27	11. 23, 4	22, 0
F.	30	8. 8. 8. 53	16. 25. 32, 7	21. 41. 22	11. 1, 4	

Days	Time of ☉'s Semidiam. passs Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S. $\gamma$	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 9	16. 11, 0	2. 30, 3	9. 996344	9. 29. 45
7	1. 7, 6	16. 12. 5	2. 30, 8	9. 995693	9. 29. 26
13	1. 8, 3	16. 13, 7	2. 31, 2	9. 995076	9. 29. 7
19	1. 9, 0	16. 14, 9	2. 31, 7	9. 994525	9. 28. 48
25	1. 9, 6	16. 16, 1	2. 32, 0	9. 994055	9. 28. 29

## The ECLIPSES of JUPITER'S SATELLITES

are not *visible* this Month,

JUPITER being *too near* the SUN.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S.D.M.	D.M.	S.D.M.	D.M.		D.M.	H.M.
♿ MERCURY. Sup. 6 <sup>h</sup> 26 <sup>m</sup> 14 <sup>s</sup> .							
1	5. 8. 21	6. 29 N	6. 23. 52	1. 56 N	7. 28 S	23. 7	
4	5. 21. 29	5. 43	6. 28. 36	1. 43	9. 23	23. 13	
7	6. 3. 26	4. 45	7. 3. 24	1. 26	11. 19	23. 19	
10	6. 14. 25	3. 41	7. 8. 15	1. 7	13. 13	23. 25	
13	6. 24. 35	2. 34	7. 13. 5	0. 48	15. 2	23. 32	
16	7. 4. 7	1. 27	7. 17. 54	0. 27	16. 45	23. 38	
19	7. 13. 9	0. 21 N	7. 22. 41	0. 7 N	18. 21	23. 45	
22	7. 21. 50	0. 43 S	7. 27. 27	0. 14 S	19. 50	23. 51	
25	8. 0. 16	1. 44	8. 2. 11	0. 33	21. 10	23. 58	
28	8. 8. 34	2. 42	8. 6. 54	0. 52	22. 20	0. 3	
30	8. 14. 3	3. 18	8. 10. 3	1. 4	23. 2	0. 7	
♀ VENUS.							
1	3. 4. 2	1. 7 N	5. 23. 25	0. 58 N	3. 30 N	21. 12	
7	3. 13. 45	1. 38	6. 0. 5	1. 21	1. 13 N	21. 13	
13	3. 23. 29	2. 7	6. 6. 52	1. 40	1. 12 S	21. 14	
19	4. 3. 14	2. 32	6. 13. 46	1. 54	3. 41	21. 15	
25	4. 12. 59	2. 53	6. 20. 46	2. 4	6. 12	21. 16	
♂ MARS.							
1	2. 28. 0	1. 11 N	4. 7. 3	1. 34 N	20. 3 N	18. 12	
7	3. 0. 56	1. 15	4. 9. 31	1. 44	19. 34	17. 58	
13	3. 3. 49	1. 19	4. 11. 47	1. 55	19. 7	17. 43	
19	3. 6. 42	1. 23	4. 13. 48	2. 7	18. 43	17. 27	
25	3. 9. 33	1. 27	4. 15. 33	2. 19	18. 24	17. 9	
♃ JUPITER. 6 <sup>h</sup> 8 <sup>m</sup> 11 <sup>s</sup> .							
1	7. 15. 49	1. 4 N	7. 14. 45	0. 54 N	15. 25 S	0. 24	
7	7. 16. 17	1. 3	7. 16. 4	0. 53	15. 49	0. 6	
13	7. 16. 44	1. 3	7. 17. 23	0. 53	16. 12	23. 43	
19	7. 17. 12	1. 2	7. 18. 43	0. 53	16. 34	23. 24	
25	7. 17. 40	1. 2	7. 20. 2	0. 53	16. 55	23. 4	
♄ SATURN.							
1	6. 7. 46	2. 26 N	6. 10. 35	2. 14 N	2. 9 S	22. 13	
7	6. 7. 58	2. 26	6. 11. 15	2. 15	2. 24	21. 52	
13	6. 8. 10	2. 26	6. 11. 54	2. 15	2. 38	21. 30	
19	6. 8. 22	2. 26	6. 12. 31	2. 16	2. 51	21. 7	
25	6. 8. 34	2. 26	6. 13. 5	2. 18	3. 4	20. 44	
♎ GEORGIAN.							
1	6. 17. 25	0. 38 N	6. 18. 30	0. 36 N	6. 42 S	22. 40	
11	6. 17. 33	0. 38	6. 19. 6	0. 36	6. 55	22. 2	
21	6. 17. 41	0. 38	6. 19. 39	0. 37	7. 8	21. 23	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	6.28.23.35	7. 4.25. 6	4.59.45 S	4.58.37 S
F.	2	7.10.25. 5	7.16.23.41	4.54.11	4.46.30
Sa.	3	7.22.21. 1	7.28.17.15	4.35.41	4.21.54
Sun.	4	8. 4.12.35	8.10. 7.17	4. 5.16	3.45.59
M.	5	8.16. 1.34	8.21.55.49	3.24.16	3. 0.19
Tu.	6	8.27.50.22	9. 3.45.42	2.34.22	2. 6.39
W.	7	9. 9.42.15	9.15.40.33	1.37.24	1. 6.52
Th.	8	9.21.41.10	9.27.44.43	0.35.23 S	0. 3.15 S
F.	9	10. 3.51.49	10.10. 3. 7	0.29.15 N	1. 1.49 N
Sa.	10	10.16.19.16	10.22.40.55	1.34. 4	2. 5.38
Sun.	11	10.29. 8.40	11. 5.43. 4	2.36. 5	3. 4.59
M.	12	11.12.24.33	11.19.13.31	3.31.51	3.56.13
Tu.	13	11.26.10. 7	0. 3.14.22	4.17.34	4.35.22
W.	14	0.10.26. 7	0.17.44.56	4.49.10	4.58.28
Th.	15	0.25.10. 9	1. 2.40.52	5. 2.57	5. 2.15
F.	16	1.10.15.58	1.17.54.14	4.56.17	4.44.59
Sa.	17	1.25.34.14	2. 3.14.28	4.28.32	4. 7.11
Sun.	18	2.10.53.30	2.18.29.59	3.41.26	3.11.49
M.	19	2.26. 2.39	3. 3.30.29	2.39. 2	2. 3.48
Tu.	20	3.10.52.39	3.18. 8.31	1.26.52	0.49. 0 N
W.	21	3.25.17.42	4. 2.20. 1	0.10.53 N	0.26.50 S
Th.	22	4. 9.15.27	4.16. 4. 8	1. 3.34 S	1.38.48
F.	23	4.22.46.22	4.29.22.28	2.12. 7	2.43. 8
Sa.	24	5. 5.52.53	5.12.18. 4	3.11.34	3.37.11
Sun.	25	5.18.38.31	5.24.54.44	3.59.47	4.19.13
M.	26	6. 1. 7.14	6. 7.16.27	4.35.24	4.48.14
Tu.	27	6.13.22.50	6.19.26.48	4.57.38	5. 3.36
W.	28	6.25.28.44	7. 1.28.56	5. 6.10	5. 5.20
Th.	29	7. 7.27.44	7.13.25.24	5. 1.10	4.53.41
F.	30	7.19.22. 9	7.25.18.14	4.43. 3	4.29.20



		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Th.	1	1	23. 55	204. 32	210. 23	15. 35 S	17. 42 S
F.	2	2	0	216. 22	222. 27	19. 37	21. 20
Sa.	3	3	0. 42	228. 40	234. 58	22. 49	24. 3
Sun.	4	4	1. 31	241. 23	247. 53	25. 1	25. 43
M.	5	5	2. 21	254. 26	261. 1	26. 7	26. 13
Tu.	6	6	3. 11	267. 36	274. 10	26. 1	25. 31
W.	7	7	4. 1	280. 41	287. 9	24. 44	23. 39
Th.	8	8	4. 50	293. 32	299. 51	22. 18	20. 41
F.	9	9	5. 37	306. 4	312. 13	18. 50	16. 45
Sa.	10	10	6. 23	318. 18	324. 20	14. 28	11. 59
Sun.	11	11	7. 9	330. 21	336. 23	9. 21	6. 33
M.	12	12	7. 55	342. 26	348. 33	3. 39 S	0. 39 S
Tu.	13	13	8. 42	354. 47	1. 8	2. 25 N	5. 30 N
W.	14	14	9. 33	7. 41	14. 25	8. 34	11. 34
Th.	15	15	10. 27	21. 25	28. 40	14. 27	17. 9
F.	16	16	11. 27	36. 12	44. 1	19. 36	21. 44
Sa.	17	17	12. 30	52. 4	60. 20	23. 31	24. 52
Sun.	18	18	13. 36	68. 44	77. 11	25. 45	26. 9
M.	19	19	14. 41	85. 36	93. 53	26. 3	25. 29
Tu.	20	20	15. 42	101. 58	109. 47	24. 28	23. 3
W.	21	21	16. 38	117. 18	124. 30	21. 17	19. 13
Th.	22	22	17. 29	131. 24	138. 1	16. 56	14. 28
F.	23	23	18. 15	144. 23	150. 32	11. 51	9. 9
Sa.	24	24	18. 59	156. 29	162. 18	6. 24	3. 37 N
Sun.	25	25	19. 41	168. 0	173. 37	0. 49 N	1. 56 S
M.	26	26	20. 23	179. 12	184. 46	4. 39 S	7. 18
Tu.	27	27	21. 5	190. 21	195. 59	9. 51	12. 18
W.	28	28	21. 48	201. 41	207. 29	14. 36	16. 46
Th.	29	29	22. 34	213. 23	219. 24	18. 45	20. 33
F.	30	30	23. 22	225. 32	231. 47	22. 7	23. 28

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Th.	1	14.51	14.49	54.31	54.24	5187	5197
F.	2	14.48	14.46	54.17	54.12	5206	5213
Sa.	3	14.45	14.44	54. 8	54. 5	5218	5222
Sun.	4	14.44	14.44	54. 4	54. 5	5223	5222
M.	5	14.45	14.46	54. 7	54.10	5219	5215
Tu.	6	14.47	14.49	54.16	54.24	5207	5197
W.	7	14.52	14.55	54.33	54.45	5185	5169
Th.	8	14.59	15. 3	54.59	55.15	5150	5129
F.	9	15. 8	15.14	55.33	55.54	5106	5079
Sa.	10	15.20	15.27	56.17	56.42	5049	5017
Sun.	11	15.34	15.42	57. 8	57.36	4984	4949
M.	12	15.50	15.58	58. 5	58.34	4912	4876
Tu.	13	16. 5	16.13	59. 3	59.32	4841	4805
W.	14	16.21	16.28	59.59	60.24	4772	4742
Th.	15	16.34	16.39	60.46	61. 5	4716	4693
F.	16	16.43	16.46	61.20	61.30	4676	4664
Sa.	17	16.47	16.47	61.35	61.35	4658	4658
Sun.	18	16.45	16.43	61.30	61.21	4664	4675
M.	19	16.39	16.34	61. 7	60.48	4691	4714
Tu.	20	16.28	16.22	60.27	60. 2	4739	4769
W.	21	16.14	16. 7	59.36	59. 9	4800	4833
Th.	22	15.59	15.52	58.41	58.12	4867	4903
F.	23	15.44	15.37	57.45	57.18	4937	4971
Sa.	24	15.30	15.23	56.53	56.28	5003	5035
Sun.	25	15.17	15.11	56. 6	55.45	5003	5090
M.	26	15. 7	15. 2	55.27	55.11	5114	5134
Tu.	27	14.58	14.55	54.57	54.44	5153	5170
W.	28	14.52	14.49	54.33	54.24	5185	5197
Th.	29	14.48	14.46	54.17	54.11	5206	5214
F.	30	14.45	14.44	54. 7	54. 5	5219	5222

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	3	-	-	-	-	-	-	-	-	91. 3.32	89.42.18	88.21. 6	86.59.56				
	4	85.38.49		84.17.45		82.56.44		81.35.48		80.14.55	78.54. 7	77.33.24	76.12.46				
	5	74.52.13		73.31.45		72.11.24		70.51.10		69.31. 2	68.11. 2	66.51.10	65.31.28				
	6	64.11.54		62.52.29		61.33.16		60.14.16		58.55.27	57.36.53	56.18.34	55. 0.31				
α Pegasi.	7	53.42.45															
	8	72.45.23		71.19.16		69.53. 5		68.26.50		67. 0.31	65.34. 9	64. 7.43	62.41.13				
	9	61.14.40		59.48. 2		58.21.22		56.54.39		55.27.53	54. 1. 4	52.34.14	51. 7.23				
α Arietis.	10	49.40.32		48.13.42		46.46.54		45.20. 8		43.53.26							
	11	-	-	-	-	-	-	-	-	84.47.21	83.13.49	81.39.58	80. 5.49				
	12	78.31.20		76.56.32		75.21.24		73.45.55		72.10. 5	70.33.54	68.57.20	67.20.25				
	13	65.43. 7		64. 5.26		62.27.21		60.48.53		59.10. 1	57.30.44	55.51. 3	54.10.58				
Aldebaran.	14	52.30.28		50.49.33		49. 8.14		47.26.29		45.44.19							
	15	-	-	-	-	-	-	-	-	78.18.56	76.37. 4	74.54.46	73.12. 2				
	16	71.28.53		69.45.18		68. 1.20		66.16.57		64.32.10	62.46.59	61. 1.26	59.15.31				
	17	57.20.15		55.42.37		53.55.42		52. 8.29		50.20.59	48.33.12	46.45.15	44.57. 7				
	18	43. 8.48		41.20.18		39.31.50		37.43.22		35.54.56	34. 6.40	32.18.37	30.30.51				
	19	28.43.24															
	20	-	-	-	-	-	-	-	-								

Stars Names.	Days	Noon.	III <sup>h</sup> .	V <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	16	69.52.46	67.59.34	66. 6.12	64.12.40	62.19. 1	60.25.15	58.31.27	56.37.36
	17	54.43.42	52.49.48	50.55.58	49. 2.12	47. 8.30	45.14.56	43.21.31	41.28.17
	18	39.35.15							
Regulus.	18	76.13.54	74.19.39	72.25.34	70.31.40	68.37.57	66.44.27	64.51.12	62.58.11
	19	61. 5.26	59.12.58	57.20.49	55.28.58	53.37.27	51.46.17	49.55.28	48. 5. 3
	20	46.14.59	44.25.20	42.36. 6	40.47.17	38.58.53	37.10.55	35.23.25	33.36.22
	21	31.49.47	30. 3.41	28.18. 5	26.33. 0	24.48.25			
Spica $\pi$	21	- - -	- - -	- - -	- - -	78.46.40	77. 1.54	75.17.36	73.33.43
	22	71.50.17	70. 7.17	68.24.43	66.42.35	65. 0.52	63.19.35	61.38.43	59.58.15
	23	58.18.13	56.38.36	54.59.22	53.20.33	51.42. 7	50. 4. 4	48.26.24	46.49. 6
	24	45.12.10							
The Sun.	21	123.43.56	122. 5.18	120.27. 5	118.49.17	117.11.55	115.34.58	113.58.27	112.22.21
	22	110.46.40	109.11.25	107.36.36	106. 2.11	104.28.12	102.54.38	101.21.27	99.48.42
	23	98.16.20	96.44.23	95.12.48	93.41.37	92.10.49	90.40.24	89.10.20	87.40.38
	24	86.11.17	84.42.18	83.13.38	81.45.19	80.17.19	78.49.38	77.22.15	75.55.11
	25	74.28.24	73. 1.55	71.35.42	70. 9.46	68.44. 5	67.18.39	65.53.27	64.28.30
	26	63. 3.47	61.39.18	60.15. 1	58.50.57	57.27. 6	56. 3.26	54.39.58	53.16.40
	27	51.53.33	50.30.36	49. 7.48	47.45.10	46.22.41	45. 0.21	43.38. 9	42.16. 6
	28	40.54.11							

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	5	-	-	-	-	-	-	-	-	38.37.37	39.58.0	39.58.0	41.18.29	42.39.2	42.39.2	42.39.2	42.39.2
	6	43.59.41	45.20.25	46.41.16	48.2.12	48.2.12	48.2.12	48.2.12	48.2.12	49.23.15	50.44.24	50.44.24	52.5.41	53.27.5	53.27.5	53.27.5	53.27.5
	7	54.48.36	56.10.16	57.32.4	58.54.2	58.54.2	58.54.2	58.54.2	58.54.2	60.16.8	61.38.24	61.38.24	63.0.51	64.23.29	64.23.29	64.23.29	64.23.29
	8	65.46.17	67.9.17	68.32.30	69.55.56	69.55.56	69.55.56	69.55.56	69.55.56	71.19.34	72.43.26	72.43.26	74.7.33	75.31.55	75.31.55	75.31.55	75.31.55
	9	76.56.31	78.21.23	79.46.31	81.11.56	81.11.56	81.11.56	81.11.56	81.11.56	82.37.39	84.3.39	84.3.39	85.29.59	86.56.37	86.56.37	86.56.37	86.56.37
	10	88.23.34	89.50.51	91.18.29	92.46.28	92.46.28	92.46.28	92.46.28	92.46.28	94.14.48	95.43.30	95.43.30	97.12.35	98.42.3	98.42.3	98.42.3	98.42.3
Antares.	11	100.11.53	101.42.7	103.12.46	104.43.48	104.43.48	104.43.48	104.43.48	104.43.48	106.15.15	107.47.7	107.47.7	109.19.24	110.52.7	110.52.7	110.52.7	110.52.7
	12	112.25.15	113.58.50	115.32.52	117.7.20	117.7.20	117.7.20	117.7.20	117.7.20	118.42.14	120.17.35	120.17.35	121.50.10	123.22.10	123.22.10	123.22.10	123.22.10
	10	69.29.33	71.4.43	72.40.13	74.16.4	74.16.4	74.16.4	74.16.4	74.16.4	75.52.17	77.28.52	77.28.52	79.5.49	80.43.10	80.43.10	80.43.10	80.43.10
	11	82.20.53	83.59.0	85.37.32	87.16.29	87.16.29	87.16.29	87.16.29	87.16.29	88.55.50	90.35.36	90.35.36	92.15.49	93.56.27	93.56.27	93.56.27	93.56.27
α Aquilæ.	12	95.37.31	97.19.2	99.1.0	100.43.26	100.43.26	100.43.26	100.43.26	100.43.26	102.26.19	104.10.10	104.10.10	106.10.10	108.10.10	108.10.10	108.10.10	108.10.10
	13	59.27.2	60.54.7	62.22.5	63.50.58	63.50.58	63.50.58	63.50.58	63.50.58	65.20.45	66.51.20	66.51.20	68.22.40	69.54.44	69.54.44	69.54.44	69.54.44
	14	71.27.33	73.1.2	74.35.7	76.9.48	76.9.48	76.9.48	76.9.48	76.9.48	77.45.5	79.20.52	79.20.52	80.57.9	82.33.54	82.33.54	82.33.54	82.33.54
	15	84.11.3	85.54.7	87.38.37	89.21.16	89.21.16	89.21.16	89.21.16	89.21.16	90.52.10	92.27.10	92.27.10	94.10.10	95.42.10	95.42.10	95.42.10	95.42.10
α Pegasi.	15	36.26.21	38.6.57	39.48.37	41.31.16	41.31.16	41.31.16	41.31.16	41.31.16	43.14.52	44.59.21	44.59.21	46.44.33	48.30.29	48.30.29	48.30.29	48.30.29
	16	50.17.7	52.4.17	53.51.55	55.40.1	55.40.1	55.40.1	55.40.1	55.40.1	57.28.35	59.17.30	59.17.30	61.6.43	62.56.12	62.56.12	62.56.12	62.56.12
	17	64.45.53	66.32.10	68.18.10	69.54.10	69.54.10	69.54.10	69.54.10	69.54.10	71.40.10	73.26.10	73.26.10	75.12.10	76.58.10	76.58.10	76.58.10	76.58.10

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
α Arietis.	17	21.10.42		23. 2.36		24.54.51		26.47.25		28.40.13		30.33.15		32.26.22		34.19.35	
	18	36.12.53		38. 6. 7		39.59.17		41.52.22		43.45.22		45.38.13		47.30.52		49.23.20	
	19	51.15.32															
Aldebaran.	19	20.37.12		22.18.25		24. 0.39		25.43.46		27.27.38		29.12.11		30.57. 6		32.42.21	
	20	34.27.58		36.13.26		37.58.52		39.44.16		41.29.37		43.14.44		44.59.38		46.44.19	
	21	48.28.47		50.12.56		51.56.46		53.40.18		55.23.32		57. 6.24		58.48.55		60.31. 4	
	22	62.12.52		63.54.17		65.35.19		67.15.59		68.56.17		70.36.12		72.15.45		73.54.54	
	23	75.33.41															
Pollux.	23	33.22.34		35. 0.38		36.38.27		38.15.59		39.53.14		41.30.13		43. 6.55		44.43.20	
	24	46.19.28		47.55.18		49.30.51		51. 6. 7		52.41. 6		54.15.48		55.50.14		57.24.24	
	25	58.58.17															
Regulus.	25	21.57.28		23.30.57		25. 4.15		26.37.22		28.10.17		29.43. 1		31.15.33		32.47.55	
	26	34.20. 5		35.52. 4		37.23.51		38.55.29		40.26.55		41.58.11		43.29.17		45. 0.14	
	27	46.31. 1		48. 1.39		49.32.10		51. 2.32		52.32.46		54. 2.53		55.32.53		57. 2.46	
	28	58.32.33		60. 2.13		61.31.48		63. 1.17		64.30.41		66. 0. 0		67.29.15		68.58.26	
	29	70.27.32		71.56.35		73.25.34		74.54.30		76.23.23		77.52.13		79.21. 2		80.49.48	
	30	82.18.32															

The SATELLITES of JUPITER

are not *visibile* this Month,

JUPITER being *too near* the SUN.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
Sa.	1		D. H. M. ● New Moon - - - - 1. 17. 35 ☾ First Quarter - - - - 9. 17. 45 ○ Full Moon - - - - 16. 9. 18 ☾ Last Quarter - - - - 23. 8. 1 ● New Moon - - - - 31. 12. 51
Sun.	2	Advent-Sunday.	Other Phenomena.
M.	3		D. H. M.
Tu.	4		4. - - ♀ x ♀, * 44' N.
W.	5		8. 9. 25 ☾ θ ☾
Th.	6	Nicholas.	12. 8. 15 ☾ η ✕
F.	7		14. 14. 39 I. of η Pl. * 4 1/2' N. of δ's C
Sa.	8	Conception of V. Mary.	14. 15. 30 1/2 E. of η Pl. * 9 1/2' N. of δ's C
Sun.	9	2d Sun. in Advent.	N.B. ☾ occults others of the Pleia.
M.	10		16. 5. 59 ☾ 125 δ
Tu.	11		17. 4. 58 ☾ ε II
W.	12		17. 19. 30 I. δ II, * 16' S. of δ's C
Th.	13		17. 19. 51 E. δ II, * 13 1/2' S. of δ's C
F.	14		18. - - ♀ x ♀, * 52' S.
Sa.	15		19. 3. 53 ☾ δ ☾
Sun.	16	3d Sun. in Adv. O Sap. C.	20. 1. 52 ☾ ξ Ω
M.	17	Oxf. T. ends. [T. ends.	20. - - ♂ Stationary.
Tu.	18		21. - - ♀ 4 ad ζ ♀, * 14' N.
W.	19		21. 11. 27 ☾ enters ♄
Th.	20		24. - - ♀ ♄, ♀ 64' N.
F.	21	St. Thomas.	28. 4. 3 ☾ π ♀
Sa.	22		28. 13. 55 ☾ σ ♀
Sun.	23	4th Sun. in Advent.	28. - - ♀ θ ♀, * 39' S.
M.	24		28. 17. 53 ☾ α ♀
Tu.	25	Christmas Day.	31. - - ☾ eclipsed, invifible.
W.	26	St. Stephen.	
Th.	27	St. John.	
F.	28	Innocents.	
Sa.	29		
Sun.	30	1st Sunday after Christmas.	
M.	31	Silvester.	



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	8. 9. 9. 48	16. 29. 51, 8	21. 50. 52	10. 38, 9	
Sun.	2	8. 10. 10. 45	16. 34. 11, 7	21. 59. 58	10. 15, 6	23, 3
M.	3	8. 11. 11. 43	16. 38. 32, 2	22. 8. 37	9. 51, 7	23, 9
Tu.	4	8. 12. 12. 42	16. 42. 53, 3	22. 16. 52	9. 27, 3	24, 4
W.	5	8. 13. 13. 41	16. 47. 14, 9	22. 24. 40	9. 2, 3	25, 0
Th.	6	8. 14. 14. 42	16. 51. 37, 0	22. 32. 1	8. 36, 8	25, 5
F.	7	8. 15. 15. 43	16. 55. 59, 7	22. 38. 56	8. 10, 8	26, 0
Sa.	8	8. 16. 16. 44	17. 0. 22, 8	22. 45. 25	7. 44, 3	26, 5
Sun.	9	8. 17. 17. 47	17. 4. 46, 4	22. 51. 26	7. 17, 3	27, 0
M.	10	8. 18. 18. 49	17. 9. 10, 4	22. 57. 1	6. 50, 0	27, 3
Tu.	11	8. 19. 19. 53	17. 13. 34, 7	23. 2. 8	6. 22, 3	27, 7
W.	12	8. 20. 20. 56	17. 17. 59, 4	23. 6. 48	5. 54, 2	28, 1
Th.	13	8. 21. 22. 0	17. 22. 24, 4	23. 11. 0	5. 25, 8	28, 4
F.	14	8. 22. 23. 5	17. 26. 49, 7	23. 14. 44	4. 57, 1	28, 7
Sa.	15	8. 23. 24. 10	17. 31. 15, 3	23. 18. 1	4. 28, 2	28, 9
Sun.	16	8. 24. 25. 15	17. 35. 41, 1	23. 20. 49	3. 59, 0	29, 2
M.	17	8. 25. 26. 21	17. 40. 7, 2	23. 23. 10	3. 29, 6	29, 4
Tu.	18	8. 26. 27. 27	17. 44. 33, 4	23. 25. 2	3. 0, 0	29, 6
W.	19	8. 27. 28. 34	17. 48. 59, 8	23. 26. 26	2. 30, 3	29, 7
Th.	20	8. 28. 29. 42	17. 53. 26, 3	23. 27. 22	2. 0, 4	29, 9
F.	21	8. 29. 30. 50	17. 57. 52, 8	23. 27. 50	1. 30, 5	29, 9
Sa.	22	9. 0. 31. 59	18. 2. 19, 5	23. 27. 50	1. 0, 5	30, 0
Sun.	23	9. 1. 33. 9	18. 6. 46, 2	23. 27. 20	0. 30, 4	30, 1
M.	24	9. 2. 34. 20	18. 11. 12, 9	23. 26. 23	0. 0, 4	30, 0
Tu.	25	9. 3. 35. 31	18. 15. 39, 5	23. 24. 57	Add. 29, 6	30, 0
W.	26	9. 4. 36. 42	18. 20. 6, 1	23. 23. 3	0. 59, 6	30, 0
Th.	27	9. 5. 37. 54	18. 24. 32, 5	23. 20. 41	1. 29, 4	29, 8
F.	28	9. 6. 39. 7	18. 28. 58, 9	23. 17. 51	1. 59, 1	29, 7
Sa.	29	9. 7. 40. 19	18. 33. 25, 0	23. 14. 32	2. 28, 6	29, 5
Sun.	30	9. 8. 41. 32	18. 37. 56, 9	23. 10. 46	2. 57, 9	29, 3
M.	31	9. 9. 42. 45	18. 42. 16, 6	23. 6. 32	3. 26, 9	29, 0

# III. DECEMBER 1804. 1351

Days	Time of ☉'s Semi-diam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10, 2	16. 17, 0	2. 32, 2	9. 993647	9. 28. 9
7	1. 10, 7	16. 17, 8	2. 32, 4	9. 993286	9. 27. 50
13	1. 11, 0	16. 18, 4	2. 32, 7	9. 992987	9. 27. 31
19	1. 11, 1	16. 18, 9	2. 32, 8	9. 992785	9. 27. 12
25	1. 11, 1	16. 19, 2	2. 32, 9	9. 992684	9. 26. 53

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
8	7. 49. 38	10	9. 28. 34	9	4. 29. 53 Im.
10	2. 17. 15	13	22. 44. 42	9	6. 26. 19 E.
11	20. 44. 45	17	12. 0. 44	16	8. 24. 6 Im.
13	15. 12. 20	21	1. 16. 37	16	10. 20. 53 E.
15	9. 39. 48	24	14. 32. 26	23	12. 18. 6 Im.
17	4. 7. 20	28	3. 48. 13	23	14. 15. 16 E.
18	22. 34. 47	31	17. 3. 59	30	16. 12. 3 Im.
20	17. 2. 16			*30	18. 9. 35 E.
22	11. 29. 44				
24	5. 57. 12				
26	0. 24. 41				
*27	18. 52. 9				
29	13. 19. 38				
31	7. 47. 7				
IV. Satellite. Conj.					
				7	12. 47 Inf.
				15	22. 15½ Sup.
				24	9. 2 Inf.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY.							
1	8. 16. 48	3. 36 S	8. 11. 37	1. 9 S	23. 21 S	0. 10	
4	8. 25. 5	4. 25	8. 16. 19	1. 25	24. 11	0. 17	
7	9. 3. 29	5. 10	8. 21. 1	1. 40	24. 49	0. 24	
10	9. 12. 8	5. 49	8. 25. 44	1. 52	25. 16	0. 32	
13	9. 21. 6	6. 21	9. 0. 28	2. 2	25. 30	0. 40	
16	10. 0. 32	6. 45	9. 5. 11	2. 9	25. 30	0. 47	
19	10. 10. 32	6. 58	9. 9. 55	2. 12	25. 18	0. 55	
22	10. 21. 15	6. 58	9. 14. 36	2. 12	24. 51	1. 2	
25	11. 2. 51	6. 42	9. 19. 15	2. 7	24. 10	1. 9	
28	11. 15. 29	6. 6	9. 23. 44	1. 56	23. 17	1. 15	
31	11. 29. 20	5. 6	9. 27. 59	1. 38	22. 11	1. 19	
♀ VENUS.							
1	4. 22. 45	3. 8 N	6. 27. 51	2. 10 N	8. 42 S	21. 17	
7	5. 2. 30	3. 19	7. 5. 0	2. 12	11. 8	21. 18	
13	5. 12. 16	3. 23	7. 12. 13	2. 10	13. 27	21. 20	
19	5. 22. 0	3. 22	7. 19. 28	2. 5	15. 37	21. 22	
25	6. 1. 44	3. 15	7. 26. 47	1. 57	17. 34	21. 25	
♂ MARS.							
1	3. 12. 22	1. 30 N	4. 17. 1	2. 32 N	18. 10 N	16. 49	
7	3. 15. 11	1. 33	4. 18. 7	2. 46	18. 3	16. 27	
13	3. 17. 58	1. 36	4. 18. 49	3. 0	18. 3	16. 4	
19	3. 20. 44	1. 38	4. 19. 6	3. 15	18. 12	15. 38	
25	3. 23. 29	1. 41	4. 18. 56	3. 30	18. 30	15. 12	
♃ JUPITER.							
1	7. 18. 7	1. 2 N	7. 21. 19	0. 53 N	17. 16 S	22. 43	
7	7. 18. 35	1. 1	7. 22. 37	0. 52	17. 36	22. 23	
13	7. 19. 3	1. 1	7. 23. 53	0. 52	17. 55	22. 1	
19	7. 19. 31	1. 0	7. 25. 7	0. 53	18. 13	21. 40	
25	7. 19. 58	1. 0	7. 26. 19	0. 53	18. 30	21. 18	
♄ SATURN.							
1	6. 8. 46	2. 26 N	6. 13. 38	2. 19 N	3. 15 S	20. 21	
7	6. 8. 58	2. 26	6. 14. 8	2. 20	3. 26	19. 56	
13	6. 9. 9	2. 27	6. 14. 35	2. 21	3. 35	19. 32	
19	6. 9. 21	2. 27	6. 14. 59	2. 23	3. 43	19. 7	
25	6. 9. 33	2. 27	6. 15. 20	2. 24	3. 49	18. 41	
♅ GEORGIAN.							
1	6. 17. 49	0. 38 N	6. 20. 9	0. 37 N	7. 19 S	20. 42	
11	6. 17. 56	0. 38	6. 20. 35	0. 37	7. 29	20. 0	
21	6. 18. 4	0. 38	6. 20. 57	0. 37	7. 37	19. 17	
31	6. 18. 12	0. 38	6. 21. 14	0. 38	7. 42	18. 34	

## THE MOON'S

Longitude.

Latitude.

Days of the Week.	Days of the Month.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Sa.	1	8. 1. 13. 48		8. 7. 9. 6		4. 12. 46 S		3. 53. 23 S	
Sun.	2	8. 13. 4. 17		8. 18. 59. 34		3. 31. 29		3. 7. 16	
M.	3	8. 24. 55. 9		9. 0. 51. 15		2. 40. 57		2. 12. 49	
Tu.	4	9. 6. 48. 6		9. 12. 46. 3		1. 43. 7		1. 12. 9	
W.	5	9. 18. 45. 24		9. 24. 46. 29		0. 40. 13 S		0. 7. 39 S	
Th.	6	10. 0. 49. 45		10. 6. 55. 35		0. 25. 14 N		0. 58. 6 N	
F.	7	10. 13. 4. 30		10. 19. 16. 59		1. 30. 36		2. 2. 22	
Sa.	8	10. 25. 33. 33		11. 1. 54. 44		2. 33. 1		3. 2. 10	
Sun.	9	11. 8. 21. 3		11. 14. 52. 59		3. 29. 24		3. 54. 20	
M.	10	11. 21. 30. 58		11. 28. 15. 24		4. 16. 31		4. 35. 32	
Tu.	11	0. 5. 6. 33		0. 12. 4. 32		4. 50. 57		5. 2. 22	
W.	12	0. 19. 9. 26		0. 26. 20. 59		5. 9. 25		5. 11. 44	
Th.	13	1. 3. 38. 54		1. 11. 2. 36		5. 9. 5		5. 1. 17	
F.	14	1. 18. 31. 18		1. 26. 4. 3		4. 48. 18		4. 30. 11	
Sa.	15	2. 3. 39. 47		2. 11. 17. 12		4. 7. 13		3. 39. 44	
Sun.	16	2. 18. 55. 0		2. 26. 31. 51		3. 8. 18		2. 33. 31	
M.	17	3. 4. 6. 29		3. 11. 37. 40		1. 56. 9		1. 17. 0 N	
Tu.	18	3. 19. 4. 22		3. 26. 25. 40		0. 36. 51 N		0. 3. 28 S	
W.	19	4. 3. 40. 54		4. 10. 49. 35		0. 43. 12 S		1. 21. 41	
Th.	20	4. 17. 51. 23		4. 24. 46. 11		1. 58. 19		2. 32. 36	
F.	21	5. 1. 34. 0		5. 8. 15. 3		3. 4. 9		3. 32. 38	
Sa.	22	5. 14. 49. 36		5. 21. 18. 4		3. 57. 51		4. 19. 35	
Sun.	23	5. 27. 40. 51		6. 3. 58. 29		4. 37. 46		4. 52. 21	
M.	24	6. 10. 11. 28		6. 16. 20. 28		5. 3. 18		5. 10. 37	
Tu.	25	6. 22. 25. 59		6. 28. 28. 28		5. 14. 22		5. 14. 35	
W.	26	7. 4. 28. 30		7. 10. 26. 36		5. 11. 21		5. 4. 45	
Th.	27	7. 16. 23. 13		7. 22. 18. 48		4. 54. 54		4. 41. 55	
F.	28	7. 28. 13. 47		8. 4. 8. 33		4. 25. 56		4. 7. 7	
Sa.	29	8. 10. 3. 27		8. 15. 58. 46		3. 45. 38		3. 21. 41	
Sun.	30	8. 21. 54. 50		8. 27. 51. 52		2. 55. 30		2. 27. 18	
M.	31	9. 3. 50. 8		9. 9. 49. 51		1. 57. 23		1. 26. 0	

		THE M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage Merid	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	1	♂	238. 9	244. 37	24. 33 S	25. 21 S
Sun.	2	2	0. 11	251. 9	257. 44	25. 53	26. 7
M.	3	3	1. 1	264. 21	270. 57	26. 3	25. 41
Tu.	4	4	1. 51	277. 30	284. 0	25. 0	24. 3
W.	5	5	2. 40	290. 25	296. 44	22. 49	21. 19
Th.	6	6	3. 27	302. 57	309. 4	19. 35	17. 38
F.	7	7	4. 12	315. 6	321. 3	15. 28	13. 7
Sa.	8	8	4. 56	326. 57	332. 49	10. 37	7. 58
Sun.	9	9	5. 40	338. 41	344. 34	5. 13 S	2. 22 S
M.	10	10	6. 25	350. 31	356. 34	0. 34 N	3. 31 N
Tu.	11	11	7. 12	2. 45	9. 6	6. 29	9. 25
W.	12	12	8. 2	15. 40	22. 29	12. 16	15. 1
Th.	13	13	8. 57	29. 34	36. 57	17. 35	19. 55
F.	14	14	9. 56	44. 38	52. 35	21. 58	23. 40
Sa.	15	15	11. 1	60. 47	69. 10	24. 57	25. 47
Sun.	16	16	12. 7	77. 39	86. 9	26. 8	25. 59
M.	17	17	13. 10	94. 33	102. 46	25. 20	24. 14
Tu.	18	18	14. 12	110. 45	118. 26	22. 43	20. 50
W.	19	19	15. 6	125. 49	132. 54	18. 39	16. 14
Th.	20	20	15. 56	139. 41	146. 12	13. 37	10. 53
F.	21	21	16. 43	152. 29	158. 34	8. 4	5. 12 N
Sa.	22	22	17. 26	164. 30	170. 18	2. 20 N	0. 31 S
Sun.	23	23	18. 8	176. 2	181. 42	3. 19 S	6. 3
M.	24	24	18. 50	187. 22	193. 2	8. 41	11. 12
Tu.	25	25	19. 33	198. 44	204. 31	13. 36	15. 50
W.	26	26	20. 18	210. 22	216. 19	17. 54	19. 47
Th.	27	27	21. 5	222. 24	228. 35	21. 27	22. 54
F.	28	28	21. 54	234. 54	241. 18	24. 6	25. 2
Sa.	29	29	22. 44	247. 48	254. 23	25. 42	26. 4
Sun.	30	30	23. 34	261. 0	267. 38	26. 8	25. 54
M.	31	1	♂	274. 15	280. 49	25. 22	24. 32

# VII. DECEMBER 1804. 139

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Neon.	Midnight.	Neon.	Midnight.	Neon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sa.	1	14. 44	14. 44	54. 3	54. 3	5225	5225
Sun.	2	14. 44	14. 45	54. 4	54. 7	5223	5219
M.	3	14. 46	14. 47	54. 11	54. 16	5214	5207
Tu.	4	14. 49	14. 51	54. 22	54. 31	5199	5187
W.	5	14. 54	14. 57	54. 40	54. 51	5175	5161
Th.	6	15. 0	15. 4	55. 4	55. 18	5144	5125
F.	7	15. 8	15. 13	55. 34	55. 52	5104	5081
Sa.	8	15. 19	15. 25	56. 12	56. 33	5055	5028
Sun.	9	15. 31	15. 38	56. 56	57. 21	4999	4967
M.	10	15. 44	15. 52	57. 46	58. 12	4936	4903
Tu.	11	15. 59	16. 6	58. 39	59. 6	4870	4837
W.	12	16. 14	16. 20	59. 33	59. 58	4804	4773
Th.	13	16. 27	16. 33	60. 22	60. 43	4745	4719
F.	14	16. 38	16. 41	61. 1	61. 15	4698	4682
Sa.	15	16. 44	16. 45	61. 25	61. 30	4670	4664
Sun.	16	16. 45	16. 44	61. 30	61. 26	4664	4669
M.	17	16. 42	16. 38	61. 16	61. 2	4680	4697
Tu.	18	16. 33	16. 27	60. 44	60. 22	4718	4745
W.	19	16. 20	16. 13	59. 57	59. 29	4775	4809
Th.	20	16. 5	15. 57	59. 0	58. 31	4844	4880
F.	21	15. 49	15. 41	58. 2	57. 33	4916	4952
Sa.	22	15. 33	15. 26	57. 5	56. 38	4987	5022
Sun.	23	15. 19	15. 13	56. 13	55. 50	5054	5084
M.	24	15. 7	15. 2	55. 30	55. 12	5110	5133
Tu.	25	14. 58	14. 54	54. 56	54. 42	5154	5173
W.	26	14. 51	14. 49	54. 31	54. 22	5187	5199
Th.	27	14. 47	14. 46	54. 15	54. 10	5209	5215
F.	28	14. 45	14. 45	54. 8	54. 7	5218	5219
Sa.	29	14. 45	14. 46	54. 8	54. 10	5218	5215
Sun.	30	14. 47	14. 48	54. 14	54. 19	5210	5203
M.	31	14. 50	14. 52	54. 26	54. 33	5194	5185

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
$\alpha$ Pegasi.	3	-	-	-	-	-	-	-	-	81. 14. 57	79. 48. 48	79. 48. 48	78. 22. 36	76. 56. 23	76. 56. 23	76. 56. 23	76. 56. 23
	4	75. 30. 7	63. 59. 0	74. 3. 49	62. 32. 31	72. 37. 30	61. 6. 1	71. 11. 9	59. 39. 32	69. 44. 46	68. 18. 21	68. 18. 21	66. 51. 55	65. 25. 28	65. 25. 28	65. 25. 28	65. 25. 28
	5	63. 59. 0	53. 27. 17	62. 32. 31	51. 0. 56	61. 6. 1	49. 34. 40	59. 39. 32	48. 8. 31	58. 13. 3	56. 46. 33	56. 46. 33	55. 20. 6	53. 53. 40	53. 53. 40	53. 53. 40	53. 53. 40
	6	53. 27. 17	40. 59. 40	51. 0. 56	40. 59. 40	49. 34. 40	40. 59. 40	48. 8. 31	40. 59. 40	46. 42. 26	45. 16. 30	45. 16. 30	43. 50. 43	42. 25. 6	42. 25. 6	42. 25. 6	42. 25. 6
$\alpha$ Arietis.	7	-	-	-	-	-	-	-	-	75. 31. 28	73. 57. 50	73. 57. 50	72. 23. 57	70. 49. 49	70. 49. 49	70. 49. 49	70. 49. 49
	8	81. 43. 45	69. 15. 26	80. 11. 1	67. 40. 48	78. 38. 3	66. 5. 52	77. 4. 52	64. 30. 41	62. 55. 13	61. 19. 28	61. 19. 28	59. 43. 25	58. 7. 4	58. 7. 4	58. 7. 4	58. 7. 4
	9	69. 15. 26	56. 30. 25	67. 40. 48	54. 53. 27	66. 5. 52	53. 16. 10	64. 30. 41	51. 38. 34	50. 0. 40	48. 22. 26	48. 22. 26	46. 43. 52	45. 4. 59	45. 4. 59	45. 4. 59	45. 4. 59
	10	56. 30. 25	43. 25. 45	54. 53. 27	43. 25. 45	53. 16. 10	43. 25. 45	51. 38. 34	43. 25. 45	50. 0. 40	48. 22. 26	48. 22. 26	46. 43. 52	45. 4. 59	45. 4. 59	45. 4. 59	45. 4. 59
Aldebaran.	10	76. 5. 7	67. 43. 58	74. 26. 14	61. 2. 14	72. 46. 59	59. 20. 9	71. 7. 23	57. 37. 45	69. 27. 24	67. 47. 4	67. 47. 4	66. 6. 23	64. 25. 21	64. 25. 21	64. 25. 21	64. 25. 21
	11	67. 43. 58	49. 0. 48	61. 2. 14	47. 16. 31	59. 20. 9	45. 32. 2	57. 37. 45	43. 47. 21	55. 55. 0	54. 11. 53	54. 11. 53	52. 28. 29	50. 44. 47	50. 44. 47	50. 44. 47	50. 44. 47
	12	49. 0. 48	35. 1. 38	47. 16. 31	33. 16. 28	45. 32. 2	31. 31. 26	43. 47. 21	29. 46. 34	42. 2. 27	40. 17. 20	40. 17. 20	38. 32. 7	36. 46. 54	36. 46. 54	36. 46. 54	36. 46. 54
	13	35. 1. 38	-	33. 16. 28	-	31. 31. 26	-	29. 46. 34	-	28. 1. 58	-	-	-	-	-	-	-
Pollux.	13	-	-	-	-	-	-	-	-	69. 6. 14	67. 15. 38	67. 15. 38	65. 24. 45	63. 33. 34	63. 33. 34	63. 33. 34	63. 33. 34
	14	61. 42. 7	46. 43. 33	59. 50. 25	44. 50. 40	57. 58. 31	42. 57. 49	56. 6. 25	41. 4. 58	54. 14. 7	52. 21. 38	52. 21. 38	50. 29. 3	48. 36. 20	48. 36. 20	48. 36. 20	48. 36. 20
	15	46. 43. 33	-	44. 50. 40	-	42. 57. 49	-	41. 4. 58	-	39. 12. 5	-	-	-	-	-	-	-

Stars Names.	Days	Noon.		III <sup>a</sup> .		VI <sup>a</sup> .		IX <sup>a</sup> .		Midnight.		XV <sup>a</sup> .		XVIII <sup>a</sup> .		XXI <sup>a</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	15	-	-	-	-	-	-	-	-	75. 50. 27	73. 56. 7	72. 1. 49	70. 7. 30				
	16	68. 13. 9	66. 18. 51	64. 24. 38	62. 30. 29	60. 36. 25	58. 42. 27	56. 48. 40	54. 55. 2	52. 54. 27	50. 58. 42	48. 54. 27	46. 50. 58	44. 46. 0	42. 41. 46	40. 37. 52	38. 34. 26
	17	53. 1. 34	51. 8. 19	49. 15. 19	47. 22. 35	45. 30. 5	43. 37. 52	41. 46. 0	39. 54. 26	37. 54. 27	35. 50. 58	33. 46. 27	31. 42. 27	29. 38. 27	27. 34. 27	25. 30. 27	23. 26. 27
	18	38. 3. 13	36. 12. 21	34. 21. 54	32. 31. 51	30. 42. 14	28. 53. 4	27. 4. 23	25. 16. 11	23. 28. 32	21. 39. 4	19. 50. 58	17. 41. 46	15. 32. 34	13. 23. 26	11. 14. 18	9. 5. 10
Spica $\pi$	19	77. 25. 29	75. 37. 25	73. 49. 47	72. 2. 36	70. 15. 52	68. 29. 35	66. 43. 45	64. 58. 22	62. 54. 27	60. 50. 58	58. 46. 27	56. 42. 27	54. 38. 27	52. 34. 27	50. 30. 27	48. 26. 27
	20	63. 13. 27	61. 28. 59	59. 45. 1	58. 1. 28	56. 18. 25	54. 35. 50	52. 53. 43	51. 12. 3	49. 18. 25	47. 14. 27	45. 10. 27	43. 6. 27	41. 2. 27	39. 58. 27	37. 54. 27	35. 50. 27
	21	49. 30. 52	47. 50. 8	46. 9. 52	44. 30. 2	42. 50. 41	41. 11. 47	39. 33. 19	37. 55. 18	36. 17. 43	34. 40. 33	32. 53. 4	31. 16. 11	29. 29. 35	27. 42. 27	25. 55. 18	23. 68. 10
	22	36. 17. 43	34. 40. 33	33. 3. 50	31. 27. 32	29. 51. 41	28. 16. 15	26. 41. 15	25. 6. 42	23. 32. 37	21. 58. 59	20. 25. 49	18. 53. 8	17. 20. 56	15. 47. 44	13. 34. 36	11. 21. 28
	23	23. 32. 37	21. 58. 59	20. 25. 49	18. 53. 8	17. 20. 56	15. 47. 44	14. 14. 36	12. 41. 28	11. 8. 20	9. 55. 12	8. 22. 4	6. 49. 36	5. 16. 28	3. 43. 20	2. 10. 12	0. 57. 4
The Sun.	20	-	-	-	-	-	-	-	-	-	-	-	-	121. 2. 6	108. 41. 4	95. 18. 49	83. 49. 28
	21	117. 54. 13	116. 20. 57	114. 48. 6	113. 15. 42	111. 43. 44	110. 12. 12	108. 41. 4	107. 10. 22	105. 40. 4	104. 10. 10	102. 40. 40	101. 11. 33	99. 42. 49	98. 14. 28	96. 46. 28	95. 18. 49
	22	105. 40. 4	104. 10. 10	102. 40. 40	101. 11. 33	99. 42. 49	98. 14. 28	96. 46. 28	95. 18. 49	93. 51. 32	92. 24. 35	90. 57. 57	89. 31. 39	88. 5. 40	86. 39. 59	85. 14. 35	83. 49. 28
	23	93. 51. 32	92. 24. 35	90. 57. 57	89. 31. 39	88. 5. 40	86. 39. 59	85. 14. 35	83. 49. 28	82. 24. 38	81. 0. 3	79. 35. 43	78. 11. 36	76. 47. 45	75. 24. 6	74. 0. 40	72. 37. 26
	24	82. 24. 38	81. 0. 3	79. 35. 43	78. 11. 36	76. 47. 45	75. 24. 6	74. 0. 40	72. 37. 26	71. 14. 25	69. 51. 36	68. 28. 56	67. 6. 28	65. 44. 9	64. 22. 0	62. 59. 57	61. 38. 3
	25	71. 14. 25	69. 51. 36	68. 28. 56	67. 6. 28	65. 44. 9	64. 22. 0	62. 59. 57	61. 38. 3	60. 16. 17	58. 54. 38	57. 33. 4	56. 11. 37	54. 50. 16	53. 28. 59	52. 7. 47	50. 46. 38
	26	60. 16. 17	58. 54. 38	57. 33. 4	56. 11. 37	54. 50. 16	53. 28. 59	52. 7. 47	50. 46. 38	49. 25. 34	48. 4. 38	46. 43. 34	45. 22. 37	44. 1. 43	42. 40. 50	41. 19. 58	39. 59. 7
	27	49. 25. 34	48. 4. 38	46. 43. 34	45. 22. 37	44. 1. 43	42. 40. 50	41. 19. 58	39. 59. 7	38. 38. 16	37. 17. 14	35. 16. 11	33. 15. 9	31. 14. 7	29. 13. 5	27. 12. 3	25. 11. 1
	28	38. 38. 16	37. 17. 14	35. 16. 11	33. 15. 9	31. 14. 7	29. 13. 5	27. 12. 3	25. 11. 1	23. 10. 12	21. 9. 10	19. 8. 8	17. 7. 6	15. 6. 4	13. 5. 2	11. 4. 0	9. 3. 8



*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
The Sun.	5	-	-	-	-	-	-	39.39.31	-	41. 2. 19	-	42.25.16	-	43.48.24	-	45. 11. 41	-
	6	46.35. 9	47.58.46	49.22.35	50.46.35	52.10.46	53.35. 9	54.59.44	56.24.32	57.48.32	59.14.46	60.40.13	62. 5.55	63.31.51	64.58. 2	66.24.27	67.51. 9
	7	57.48.32	59.14.46	60.40.13	62. 5.55	63.31.51	64.58. 2	66.24.27	67.51. 9	68.40.40	70.45.20	72.12.51	73.40.40	75. 8.46	76.37.10	78. 5.53	79.34.56
	8	69.18. 6	70.45.20	72.12.51	73.40.40	75. 8.46	76.37.10	78. 5.53	79.34.56	80.40.40	82.33.58	84. 4. 0	85.34.23	87. 5. 6	88.36.11	90. 7.37	91.39.26
	9	81. 4.17	82.33.58	84. 4. 0	85.34.23	87. 5. 6	88.36.11	90. 7.37	91.39.26	92.40.40	94.44.11	96.17. 8	97.50.29	99.24.13	100.58.22	102.32.54	104. 7.51
	10	93.11.37	94.44.11	96.17. 8	97.50.29	99.24.13	100.58.22	102.32.54	104. 7.51	105.43.12	107.18.57	108.55. 7	110.31.42	112. 8.42	113.46. 7	115.23.57	117. 2.12
α Aquilæ.	12	118.40.51	120.19.54	-	-	-	-	-	-	50.16.28	-	51.33.49	-	52.52.16	-	54.11.49	-
	9	-	-	-	-	-	-	-	-	61. 4.21	-	62.29.32	-	63.55.31	-	65.22.16	-
	10	55.38.24	56.54. 0	58.16.32	59.39.59	60.40.40	61. 4.21	62.29.32	63.55.31	64.58. 2	66.24.27	67.51. 9	69.18. 6	70.45.20	72.12.51	73.40.40	75. 8.46
	11	66.49.48	68.18. 2	69.46.56	71.16.30	72.40.40	73.40.40	75. 8.46	76.37.10	78. 5.53	79.34.56	80.40.40	82.33.58	84. 4. 0	85.34.23	87. 5. 6	88.36.11
α Pegasi.	12	78.53.32	-	-	-	-	-	-	-	72.46.44	-	74.17.35	-	75.49. 1	-	77.21. 0	-
	13	31. 5.54	32.38.50	34.13.14	35.49. 1	37.26. 5	38.40.40	39.59.44	41.16.30	39. 4.24	-	40.43.45	-	42.24. 8	-	44.05.31	-
	14	44. 5.32	45.47.42	47.30.38	49.14.18	50.58.44	52.43.46	54.29.21	56.15.31	50.58.44	52.43.46	54.29.21	56.15.31	58.01.41	59.46.44	61.31.51	63.17.06
	15	58. 2.15	59.49.26	61.37. 3	63.25. 4	65.13.27	67.01.41	68.50. 7	70.38.51	65.13.27	67.01.41	68.50. 7	70.38.51	72.26. 5	74.14.18	76.01.41	77.49.26
α Arietis.	16	-	-	-	-	-	-	-	-	21.38.51	-	23.29.39	-	25.20.56	-	27.12.40	-
	17	29. 4.49	30.57.20	32.50. 7	34.43. 9	36.36.26	38.29.50	40.23.19	42.16.54	36.36.26	38.29.50	40.23.19	42.16.54	44.05.31	45.58.44	47.49.26	49.40.40
	18	44.10.35	46. 4.17	47.57.58	49.51.37	51.45.15	53.38.49	55.32.14	57.25.31	51.45.15	53.38.49	55.32.14	57.25.31	59.18.41	61.01.41	62.49.26	64.38.51
	19	59.18.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Stars Names.	Days	Neon.	III.	VI.	IX.	Midnight.	XV.	XVIII.	XXI.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	17	28. 0. 9	29. 47. 7	31. 34. 27	33. 22. 7	35. 10. 1	36. 58. 8	38. 46. 19	40. 34. 32
	18	42. 22. 49	44. 10. 56	45. 58. 53	47. 46. 42	49. 34. 19	51. 21. 41	53. 8. 46	54. 55. 35
	19	56. 42. 7	58. 28. 18	60. 14. 8	61. 59. 37	63. 44. 44	65. 29. 29	67. 13. 48	68. 57. 44
	20	70. 41. 15							
Pollux.	20	28. 36. 3	30. 18. 14	32. 0. 10	33. 41. 49	35. 23. 13	37. 4. 19	38. 45. 6	40. 25. 33
	21	42. 5. 41	43. 45. 26	45. 24. 48	47. 3. 49	48. 42. 28	50. 20. 45	51. 58. 39	53. 36. 10
	22	55. 13. 18							
Regulus.	22	18. 13. 47	19. 50. 1	21. 26. 0	23. 1. 44	24. 37. 14	26. 12. 28	27. 47. 26	29. 22. 8
	23	30. 56. 33	32. 30. 39	34. 4. 29	35. 38. 2	37. 11. 18	38. 44. 17	40. 17. 0	41. 49. 28
	24	43. 21. 40	44. 53. 38	46. 25. 23	47. 56. 53	49. 28. 11	50. 59. 16	52. 30. 9	54. 0. 51
	25	55. 31. 20	57. 1. 38	58. 31. 45	60. 1. 43	61. 31. 31	63. 1. 10	64. 30. 42	66. 0. 6
	26	67. 29. 22	68. 58. 32	70. 27. 36	71. 56. 36	73. 25. 30			
	26	- - -	- - -	- - -	- - -	19. 31. 3	20. 58. 52	22. 26. 44	23. 54. 38
Spica $\pi$	27	25. 22. 34	26. 50. 33	28. 18. 33	29. 46. 36	31. 14. 40	32. 42. 45	34. 10. 51	35. 38. 59
	28	37. 7. 9	38. 35. 20	40. 3. 32	41. 31. 47	43. 0. 4	44. 28. 24	45. 56. 47	47. 25. 13
	29	48. 53. 42	50. 22. 14	51. 50. 50	53. 19. 29	54. 48. 13	56. 17. 1	57. 45. 54	59. 14. 52
	30	60. 43. 56							

CONFIGURATIONS of the SATELLITES of JUPITER  
at VII o'Clock in the *Morning*.

7		.4	1.	○	2.		.3	
8		.2		○	.4	.1		3.
9			1.	○	.2		3.	.4
10			3.	○		1.	2.	.4
11		2.	.1	○				.4
12		.3	.2	○		1.		4.
13	1.○			.3	○		.2	4.
14				1.	○	2.	.3	4.
15			2.		○	.1	4.	3.
16	2.○			1.	○	4.		3.
17			4.	3.	○		1.	2.
18		4.	3.	.1	○			
19	4.		.3	.2	○		1.	
20	4.			.3	1.○		.2	
21	.4				○		2.	.3
22		.4		2.	○	.1		.3
23		.4			1.	.2	○	
24			.4	3.	○	.1	.2	
25				.1	2.	○	.4	
26		.3	.2		○		1.	.4
27			.3	.1	○		.2	.4
28	1●				○	.3		.4
29	1.○			2.	○		.3	
30				.2	1.○			4.
31					○	.3.	.1	.2

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**ECLIPSES**  
**OF THE**  
**SATELLITES OF JUPITER,**  
**FROM**  
**M. DE LAMBRE'S TABLES,**  
**FOR THE YEAR**  
**1804,**  
**MEAN TIME.**

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1804.

## JANUARY.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 1	17.54.12	4	5. 0.38	7	9.29. 6 Im.
3	12.22.36	* 7	18.17.11	7	11.37. 7 E.
5	6.50.55	11	7.33.42	14	13.26.22 Im.
7	1.19.19	14	20.50.13	*14	15.33.41 E.
8	19.47.36	18	10. 6.39	*21	17.23.48 Im.
10	14.16. 1	21	23.23. 6	21	19.30.29 E.
12	8.44.19	25	12.39.31	28	21.22. 1 Im.
14	3.12.44	29	1.55.57	28	23.28. 1 E.
15	21.41. 1				
*17	16. 9.26				
19	10.37.43				
21	5. 6. 9				
22	23.34.27				
*24	18. 2.52				
26	12.31. 8				
28	6.59.34				
30	1.27.52				
31	19.56.18				

## FEBRUARY.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	14.24.35	* 1	15.12.21	5	1.19.45 Im.
4	8.53. 1	5	4.28.47	5	3.25.12 E.
6	3.21.19	* 8	17.45. 9	12	5.18. 2 Im.
7	21.49.45	12	7. 1.33	12	7.22.46 E.
* 9	16.18. 3	15	20.17.57	19	9.15.32 Im.
11	10.46.29	19	9.34.22	19	11.19.37 E.
13	5.14.46	22	22.50.48	*26	13.12.58 Im.
14	23.43.14	*26	12. 7.12	*26	15.16.24 E.
*16	18.11.32				
*18	12.39.59				
20	7. 8.17				
22	1.36.46				
23	20. 5. 5				
*25	14.33.33				
27	9. 1.52				
29	3.30.21				

1804.

## M A R C H.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	21.58.41	1	1.23.36	* 4	17.10.21 Im.
* 3	16.27.10	* 4	14.40. 7	4	19.13.19 E.
5	10.55.30	8	3.56.37	11	21. 7.56 Im.
7	5.23.59	*11	17.13. 9	11	23.10.24 E.
8	23.52.20	15	6.29.43	19	1. 6.29 Im.
10	18.20.51	18	19.46.15	19	3. 8.25 E.
*12	12.49.12	22	9. 2.56	26	5. 4.38 Im.
14	7.17.43	25	22.19.35	26	7. 6. 0 E.
16	1.46. 5	*29	11.36.19		
17	20.14.36				
*19	14.42.59				
21	9.11.31				
23	3.39.55				
24	22. 8.27				
*26	16.36.52				
*28	11. 5.25				
30	5.33.50				

## A P R I L.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	0. 2.23	2	0.53. 5	2	9. 3.18 Im.
2	18.30.50	* 5	14. 9.53	* 2	11. 4.10 E.
* 4	12.59.24	9	3.26.47	* 9	13. 1.19 Im.
6	7.27.52	12	16.43.43	* 9	15. 1.37 E.
8	1.56.26	16	6. 0.40	16	16.59.13 Im.
9	20.24.54	19	19.17.44	16	18.59. 6 E.
*11	14.53.29		<i>Emerfions.</i>	23	20.57.17 Im.
*13	9.21.59	*23	10.54. 6	23	22.56.48 E.
15	3.50.34	27	0.11.10		
16	22.19. 4	*30	13.28.17		
18	16.47.41				
*20	11.16.11				
	<i>Emerfions.</i>				
22	7.52.54				
24	2.21.23				
25	20.50. 1				
*27	15.18.31				
*29	9.47. 9				

1804.

## M A Y.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. s.	Days.	H. M. s.	Days.	H. M. s.
1	4.15.41	4	2.45.28	1	0.55.34 Im.
2	22.44.19	7	16. 2.46	1	2.54.40 E.
4	17.12.51	11	5.20. 2	8	4.54.49 Im.
* 6	11.41.30	14	18.37.29	8	6.53.34 E.
8	6.10. 3	18	7.54.52	*15	8.53.39 Im.
10	0.38.43	21	21.12.27	*15	10.51.59 E.
11	19. 7.17	*25	10.29.57	*22	12.53. 0 Im.
*13	13.35.56	28	23.47.40	22	14.50.57 E.
15	8. 4.30			29	16.51.37 Im.
17	2.33.12			29	18.49.12 E.
18	21. 1.48				
20	15.30.28				
*22	9.59. 4				
24	4.27.45				
25	22.56.21				
27	17.25. 3				
*29	11.53.41				
31	6.22.22				

## J U N E.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. s.	Days.	H. M. s.	Days.	H. M. s.
2	0.51. 0	* 1	13. 5.17	5	20.50. 8 Im.
3	19.19.42	5	2.23.10	5	22.47.29 E.
5	13.48.21	8	15.40.51	13	0.48.43 Im.
7	8.17. 3	12	4.58.55	13	2.45.52 E.
9	2.45.42	15	18.16.41	20	4.47.34 Im.
10	21.14.24	19	7.34.53	20	6.44.29 E.
12	15.43. 3	22	20.52.43	27	8.47.15 Im.
*14	10.11.46	*26	10.11. 2	*27	10.43.56 E.
16	4.40.25	29	23.28.57		
17	23. 9. 8				
19	17.37.47				
21	12. 6.31				
23	6.35.11				
25	1. 3.54				
26	19.32.33				
28	14. 1.16				
30	8.29.56				



1804.

## J U L Y.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. s.	Days.	H. M. s.	Days.	H. M. s.
2	2.58.40	3	12.47.22	4	12.46.27 Im.
3	21.27.20	7	2. 5.21	4	14.42.56 E.
5	15.56. 2	10	15.23.55	11	16.46. 1 Im.
* 7	10.24.41	14	2.24.26 Im	11	18.42.15 E.
9	4.53.25	14	4.41.55 E.	18	20.44.47 Im.
10	23.22. 4	17	15.43.12 Im	18	22.40.52 E.
12	17.50.47	17	18. 0.39 E.	26	0.43.23 Im.
14	12.19.26	21	5. 1.17 Im.	26	2.39.25 E.
16	6.48.10	21	7.18.40 E.		
18	1.16.50	24	18.20.10 Im		
19	19.45.33	24	20.37.30 E.		
21	14.14.12	28	7.38.18 Im.		
23	8.42.55	28	9.55.34 E.		
25	3.11.34	31	20.57.16 Im.		
26	21.40.17	31	23.14.29 E.		
28	16. 8.55				
30	10.37.38				

## A U G U S T.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>					
Days.	H. M. s.	Days.	H. M. s.	Days.	H. M. s.
1	5. 6.15	4	10.15.26 Im.	2	4.42. 4 Im.
2	23.34.57	4	12.32.35 E.	2	6.38. 1 E.
4	18. 3.36	7	23.34.28 Im.	9	8.40.53 Im.
6	12.32.18	8	1.51.33 E.	9	10.36.46 E.
8	7. 0.56	11	12.52.39 Im.	16	12.40.28 Im.
10	1.29.36	11	15. 9.40 E.	16	14.36.16 E.
11	19.58.14	15	2.11.45 Im.	23	16.39.29 Im.
13	14.26.55	15	4.28.44 E.	23	18.35.13 E.
15	8.55.32	18	15.29.55 Im.	30	20.38.46 Im.
17	3.24.13	18	17.46.50 E.	30	22.34.26 E.
18	21.52.49		<i>Emersions.</i>		
20	16.21.29	22	7. 5.57		
22	10.50. 6	25	20.24. 3		
24	5.18.45	29	9.43.14		
25	23.47.21				
27	18.16. 0				
29	12.44.36				
31	7.13.14				



## NOVEMBER.

The ECLIPSES of JUPITER's SATELLITES

are *not visible* this Month,

JUPITER being *too near* the SUN.

## DECEMBER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
8	7.42. 6	10	9.18.57	9	4.14.13 Im.
10	2.10.31	13	22.37. 2	9	6.12.23 E.
11	20.38.52	17	11.54.24	16	8.11.30 Im.
13	15. 7.15	21	1.12.19	16	10.10. 5 E.
15	9.35.36	24	14.29.37	23	12. 8.39 Im.
17	4. 3.59	28	3.47.24	23	14. 7.38 E.
18	22.32.19	31	17. 4.35	30	16. 5.57 Im.
20	17. 0.42			*30	18. 5.21 E.
22	11.29. 1				
24	5.57.24				
26	0.25.42				
*27	18.54. 5				
29	13.22.23				
31	7.50.46				

# EXPLANATION AND USE OF THE ARTICLES

CONTAINED IN THE

ASTRONOMICAL and NAUTICAL EPHEMERIS.

**I**T may be proper first to premise, that all the Calculations of the *Ephemeris* are made according to the apparent Time by the Meridian of the *Royal Observatory at Greenwich*: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the II<sup>d</sup>, IV<sup>th</sup>, V<sup>th</sup>, VI, and VII<sup>th</sup> Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of *Greenwich*.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours belong to January 11 at Three in the Morning by Civil Reckoning.

There are XII Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: the second the Day

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of the Month : the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days : The last Column shews at Top the Moon's Phases, or the Times of New and full Moon, and of the first and last Quarter or two Quadratures with the Sun : Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables ; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of  $60^{\circ}$  North and  $40^{\circ}$  South : The Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by *Bayer's* Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon ; and Em. or Emerfion, to signify the Re-appearance of the same. Thus  $8^{\circ}.16^h.22'$  D 9  $\nu$ , signifies that the Moon will be in Conjunction with the Star 9  $\nu$  on the Eighth Day at  $16^h.22'$ , exclusive of Parallax : And  $10^{\circ}.9^h.14'$  Im. of  $\epsilon$  II.  $10^{\circ}.10^h.23'$  Em. signifies that the Moon will eclipse  $\epsilon$  II on the 10th Day, the Immersion being at  $9^h.14'$ . and the Emerfion at  $10^h.23'$ , apparent Time at *Greenwich*.

The Occultations set down are those only visible at *Greenwich* ; the Circumstances of which will commonly not differ very widely in most Parts of the kingdom ; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all : The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixed Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables ; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place ; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled ; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience ; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris*, and converting it into Degrees, at the Rate of  $15^{\circ}$  to One Hour, &c. or more briefly by Table XIV. page 38 of the Tables requisite to be used with the *Ephemeris*. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixt Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations ; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the second Page of the Month contain the Day of the Week and Month, as before ; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made Use of in most of the succeeding Calculations of the *Ephemeris*, and may serve either to verify them or to make other similar Calculations at a different Time of the Day : Particularly it may serve, with the Help of the Moon's Longitude and Latitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase : Saying, as  $24^h$ . is to the Hour from Noon reckoned by the Meridian of *Greenwich*, so is the daily Variation of the Sun's Longitude, to a fourth Number ; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it must be first reduced thereto ; by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to  $15^{\circ}$ . and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich*. Example : Suppose any one should want to know the Sun's Longitude, January 19, 1767, at  $4^h. 35'$ , being in  $21^{\circ}. 15'$  Longitude East of *Greenwich*. The Difference of Longitude turned into Time is  $1^h. 25'$ , which subtracted from  $4^h. 35'$  because the Place is East of *Greenwich*, leaves  $3^h. 10'$  for the Time reduced to the Meridian of *Greenwich*. The Sun's Longitude the preced-

ing Noon is  $9^{\circ}. 29^{\circ}. 18'. 2''$ , and the following Noon it is  $10^{\circ}. 0^{\circ}. 19'. 4''$ , the Difference is,  $1^{\circ}. 1'. 2''$ , or  $61'. 2''$ , the daily Variation. Then say, as  $24^h.$  is to  $3^h. 10'$ , so is  $61'. 2''$ , to  $8'. 3''$ , which added to  $9^{\circ}. 29^{\circ}. 18'. 2''$ , the Sun's Longitude on the preceding Noon, gives  $9^{\circ}. 29^{\circ}. 26'. 5''$ , the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clock: For this Purpose the Sun's right Ascension at the preceding Noon, together with the increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Times serves also to compute the apparent Time of a known Star passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's setting or Rising which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must be found to the time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the daily Increase or Decrease,

in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0<sup>h</sup>. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's places set down for Midnight were computed to 12<sup>h</sup>. increased or diminished by the Equation of time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the *Ephemeris*, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.



But when Time-keepers are used at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1'. to 15'. *&c.* The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, Page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Center, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Co-sine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1'. to 15'. and 1" to 15" gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Co-sine of his Declination to the logistick Logarithm of his Semidiameter, the Sum is the logistick Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Center; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centers. It is also useful to Astronomers to verify or ascertain the exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Versed Sine of the uneclipsed Part has been measured with the Micrometer. The Semidiameters of the Sun in *Mayer's* Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be 16' 2", 8, which Mr. *Mayer* says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark, that the Quadrant here mentioned was given to the *University of Gottingen* by his late Majesty, and was made by that ingenious Artist the late Mr. *John Bird* after the Model of the

**Eight Feet mural Arch**, which he finished for the *Royal Observatory* at *Greenwich*, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at  $23^{\circ}.28'.16''$ , which Dr. Bradley settled by his Observations, reduced to the Year 1750, at  $23^{\circ}.28'.18''$ . The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the rate of about  $\frac{1}{2}$  a Second in a Year. The same Instrument he also used in settling the Elements of his Solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his Solar Tables; the Agreement of this Table with Dr. Bradley's, see Page 1st of *Requisite Tables* (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than two different Tables.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner's Guide*, Page 49, and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoxial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are set down on the lower part of Page III. They are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed since the Invention of Telescopes, and the Construction of Tables for calculating the Time of their happening; and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Directions of the COMMISSIONERS OF LONGITUDE, in 1763, I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but could not derive any advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the *Desiderata*. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or 2 Feet focal Length, and Telescopes of Mr. *Dollond's* Construction with two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, and  $3\frac{1}{4}$  Inches aperture, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his Difference of Longitude into Time: See *Requisite Tables*, Page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the apparent Time at which the Eclipse will happen at his Meridian nearly. He must further take care to regulate his Watch or Clock by mean Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by reflection from a Basin of Water or Quick-silver, or from the horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made

**on Purpose.** It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn by Problems VIII. and IX. Pages 25 and 26 of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion or Emerfion of the three first Satellites; and Ten Minutes before that of the fourth Satellite; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emerfions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emerfions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emerfions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the two outer Satellites. The Immersions and Emerfions marked with an Asterisk in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any Place, find whether Jupiter be 8° above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting, may be found for any Latitude by a Table of semidiurnal Arcs contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set

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down in the *Ephemeris*, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semi-diurnal Arc answering to the same Declination of the Sun: Remembering always, that Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semi-diurnal Arc will be more than six Hours, and if they are of contrary Denominations, will be less than six Hours. But it may be easier found whether the Eclipse will be visible at *Greenwich*, or whether it should be properly marked with an Asterisk, by the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris*, which must be turned into Degrees, &c. by *Requisite Tables*, Page 38; and will be East or West of *Greenwich*, as the Time observed is more or less than that of the *Ephemeris*.

Example: Suppose an Emerfion of the first Satellite should be observed at the *Cape of Good Hope*, May 9, 1767, at  $10^h. 46'. 45''$  apparent Time: The Time by the *Ephemeris* being  $9^h. 33' 12''$  the Difference is  $1^h. 13'. 33''$ , whence the Longitude of the *Cape* should be  $18^{\circ}. 23'. 15''$  East of *Greenwich*, because the Time supposed to be observed at the *Cape* is more than that of the *Ephemeris*.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which correction applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page IV, serve to shew where to look for them in the Heavens, to enable persons less skilled to distinguish them from the fixed Stars. They also shew when they are in the most important Points of their Orbits where it is most material to observe them. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations, and also to those who are only furnished with a Telescope fitted with a Micrometer.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's

right Ascension at Noon in Time from it; to find the Time of the Planet's passing the Meridian nearly; which call  $T$ ; take the difference of the  $\odot$  and Planet's daily Variations in right Ascension in Time, the Planet is progressive in right ascension, or the Sum, if it is retrograde, which call  $X$ ; then say by the Rule of proportion;

As  $24^h \mp X : T :: X : e$  and  $T \pm e$  will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to  $e$  and  $T$  if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference of Sum of the  $\odot$  and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to  $24^h$ . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planets passing the Meridian, found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the Apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767?

The Sun's right Ascension in Time July 1st, is  $6^h 40' 25''$  and July 2d, is  $6^h 44' 33''$  by the *Ephemeris*. Therefore his daily Motion in right Ascension is  $4'. 8''$ . The Moon's right Ascension July 1st at Noon by the *Ephemeris* is  $159^\circ 2'$ , answering to  $10^h 36'. 8''$  of Time, and July 2d is  $169^\circ 39'$ , answering to  $11^h 18'. 36''$ . The Difference is  $42'. 28''$  of Time, from which  $4'. 8''$  being subtracted, leaves  $38'. 20''$ . Subtract  $6^h 40'. 25''$ , the Sun's right Ascension July 1st at Noon, from  $10^h 36'. 8''$  the Moon's right Ascension the same Noon, the Remainder  $3^h 55'. 43''$  is the Approximate Time of the Moon's passing the Meridian. The proportional Part of  $38'. 20''$ , answering to this, is  $6'. 17''$ , and the proportional Part of  $6'. 17''$  is  $9''$ ; therefore  $6'. 17''$  and  $9''$ , or  $6'. 26''$  added to  $3^h 55'. 43''$  give  $4^h 2'. 9''$ , the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is  $4^h 2'$ . It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, and XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, Horizontal Parallax, with its proportional Logarithm, are computed Twice a Day to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16<sup>h</sup>. 22'. 16".

First to find the Longitude.

The Moon's Longitude, July 16, at 12<sup>h</sup>. is 0°. 60'. 25", and July 17, at Noon, 0°. 13°. 47'. 48", the Difference 7°. 7'. 23" is the Moon's Motion in 12 Hours; say then by the Rule of Proportion:

As 12<sup>h</sup> is to 4<sup>h</sup>. 22'. 16" (the excess of 16<sup>h</sup>. 22'. 16" above 12<sup>h</sup>) so is 7°. 7'. 23" to 2°. 35'. 41"; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's *Sexagesimal Table*, Page 244—247: For this Purpose take out of the *Ephemeris* the two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows;

	M's Long. by the <i>Ephemeris</i>	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	. . . "	. . . "		
July 16, Noon	11. 29. 29. 34	7. 10. 51	' "	' "
Midnight	0. 6. 40. 25	7. 7. 23	3. 28	
17, Noon	0. 13. 47. 48	7. 3. 39	3. 44	3. 36
Midnight	0. 20. 51. 27			

Take their Differences 7°. 10'. 51", 7°. 7'. 23", 7°. 3'. 39"; take the Differences of these Differences, or the second Difference 3'. 28", 3'. 44"; and take their Mean which is 3'. 36". Now look for the Equation of second Difference, answering to 4<sup>h</sup>. 22' after Midnight, found on the Side, and 3'. 36" at the Top, which will be found = 24", and which, according to the Remark at the Bottom of the Table, must be added to 2°. 35'. 41", the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing, the Sum 2°. 36'. 5" added to 0°. 60'. 25", the Moon's Longitude at Midnight, gives 0°. 9°. 16'. 30", the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

**N. B.** If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, *vice versa*, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Page 244—247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to, or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 1767, 16<sup>h</sup>. 22'. 16".

	D's Lat. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	° ' "	' "	' "	' "
July 16, Noon	4. 31. 10 N.	18. 26	4. 36	4. 40
Midnight	4. 49. 36	13. 50	4. 44	
17, Noon	5. 3. 26	9. 6		
Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50" say by Proportion,

As 12<sup>h</sup> is to 4<sup>h</sup>. 22'. 16", so is 13'. 50" to 5'. 2": but this must be corrected by adding 32", the Equation of second Difference, answering to the Hour 4<sup>h</sup>. 22', and the Mean second Difference 4'. 40", because the first Differences are decreasing, or rather because the first of them 18'. 26", is greater than the last of them 9'. 6", therefore the proportional Part corrected is 5'. 2" + 32" = 5'. 34", which added to 4°. 49'. 36", gives 4°. 55'. 10" N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.



I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or *vice versa*, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Page 244—247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease, and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244—247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed  $2\frac{1}{2}$ , this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page VI. and VII. *viz.* the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables*.

The Moon's Longitude and Latitude are used in computing the Distances from the Sun and Stars contained in the four last Pages of

**the Month**, as well as the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57, and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93, and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. Edwards's 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from Sun and fixed Stars, contained in the VIIIth, IXth, Xth and XIth Pages of the Month are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is not a Remark unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between  $40^{\circ}$  and  $120^{\circ}$  of Distance, While the Moon is between the Distances of  $20^{\circ}$  and  $40^{\circ}$  from the

Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of  $40^{\circ}$  and  $90^{\circ}$  from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above  $90^{\circ}$  from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from  $90^{\circ}$  to  $120^{\circ}$ . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the help of the *Ephemeris*, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between  $90^{\circ}$  and  $120^{\circ}$  distant from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits; since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them, Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the imperfection of the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables, as corrected from a Series of *Dr. Bradley's* Observations of 9 Years, by *Mr. Charles Mason* in 1778, being those used for the *Nautical Almanacs* from 1789 to 1804, probably never exceeding  $30''$ , the Uncertainty hence arising in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*, and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables*, Page 38.

and adding it to or subtracting it from the apparent Time at the ship, as its Longitude is West or East of *Greenwich*. It will be sufficient if the distance be computed from the *Ephemeris* within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by comparison with the corresponding Distances observed at Sea, is shewn in Problem XI..Page 37 of *Requisite Tables*.

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours according to the Method shewn for computing the Moon's Latitude, Page 157—158; except that the Correction of second Differences at the middle of the Interval to be interpolated, was taken  $\frac{1}{8}$  of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken  $\frac{3}{4}$  of the Correction just found at the Middle of the Interval; instead of consulting Mr. *Taylor's* Table, Page 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates.

From Four Distances at Noon and Midnight computed strictly to interpolate Three Distances at the IIIrd, VIth, and IXth Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like Manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by  $b$ ; the first or last second Difference by  $c$ , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by  $d$ , and,  $a$  being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows;

$$\text{At IIIrd Hour of first Interval } a + \frac{1}{4}b - \frac{3}{32}c + \frac{1}{128}d$$

$$\text{At VIth Hour of first Interval } a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$$

$$\text{At IXth Hour of first Interval } a + \frac{3}{4}b - \frac{3}{8}c + \frac{1}{16}d$$

Or,

$$\text{At IIIrd Hour of last Interval } a + \frac{1}{4}b - \frac{3}{32}c - \frac{1}{128}d$$

$$\text{At VIth Hour of last Interval } a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$$

$$\text{At IXth Hour of last Interval } a + \frac{3}{4}b - \frac{3}{8}c - \frac{1}{16}d$$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if  $b$ ,  $c$ , or  $d$  is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of  $\frac{1}{12}$  third Difference; which will be corrected, by applying  $+\frac{1}{12}d$  or third Difference, to Number found at the first Quarter of the Interval, and  $-\frac{1}{12}d$  to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark  $\bigcirc$ , and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher  $\bigcirc$ , sometimes annexed to the Figure of the Satellite towards the Margin, signifies, that it is invisible on the Face of Jupiter; and the black Mark  $\bullet$  signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his body.

T H E E N D.

THE  
NAUTICAL ALMANAC

AND  
ASTRONOMICAL EPHEMERIS

FOR THE YEAR

1805.

PUBLISHED BY ORDER OF THE  
COMMISSIONERS OF LONGITUDE.

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# EXTRACT from the ACT of PARLIAMENT concerning the Longitude, made in the Fifth Year of the Reign of His present Majesty.

**W**HEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from Time to Time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables, constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of His Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs, and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.



**EXTRACT** of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of His present Majesty.

**B**E it enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thousand Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to one Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and



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Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar or Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed entirely upon the Principles of Gravitation laid down by *Sir Isaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them at least, shall have declared

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and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if it shall determine the said Longitude within one Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them

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for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments, out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from Time to Time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by this Act.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**E do hereby, in pursuance of the Powers vested in us by Acts of Parliament, license, authorise, and empower you to print the Nautical Almanacs and Astronomical Ephemerides for the Years 1799, 1800, 1801, 1802, 1803, 1804, and 1805; together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as have been, or may be, constructed under our Direction, and which will be delivered to you by, or by the Direction of, the Reverend Dr. Nevil Maskelyne, his Majesty's Astronomer Royal at *Greenwich*; for all which this shall be your sufficient Warrant; reserving to ourselves, nevertheless, and to our Successors, Commissioners of the aforesaid Board, or to the major Part of them, Power to revoke and annul the Appointment hereby made, by Writing signed by us, or them, whenever we or they shall see Occasion. Given under our Hands the Thirteenth Day of *February*, 1799.

To Mr. THOMAS BENSLEY,  
Printer,  
*Bolt Court, Fleet Street.*

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C. LONG.  
E. NEPEAN.  
W. MARSDEN.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**HEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, all such Nautical Almanacs and Astronomical Ephemerides, and such other useful Tables, constructed under our Direction, as have hitherto been printed or shall hereafter be printed for the several Years next ensuing, down to the Year 1805 inclusive. We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorise, and empower you to publish and vend, and to cause to be published and vended, such Nautical Almanacs, and Astronomical Ephemerides, as well as such other useful Tables, constructed under our Direction, as have hitherto been printed, or shall hereafter be printed, for the several Years next ensuing, down to the Year 1805 inclusive. For which this shall be your Warrant. Given under our Hands and Seals the 23d Day of July, 1794.

To Mr. PETER ELMSLY,  
Bookseller,  
In the STRAND.

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By Command of the Commissioners.

H. PARKER, Secretary.

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## P R E F A C E.

**T**HE Commissioners of Longitude, in Pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1805, being the Thirty-ninth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published; with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER, of *Göttingen*, to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculation; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on Account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published in the First Edition of the Tables requisite to be used with the EPHEMERIS, and since, with Improvements, in the Second Edition of the same Tables; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL, which are now also annexed to the Second Edition of the REQUISITE TABLES; but still more so by the GENERAL

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TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and Experimental Philosophy at CAMBRIDGE, in 1772.

MAYER's last Manuscript Tables of the Sun and Moon, and his curious and elaborate Theory of the Moon, were received by the Board of Longitude, after his decease, for which his Widow received a Reward of Three Thousand Pounds, by Act of Parliament, and the celebrated Mr. LEONARD EULER the Sum of Three Hundred Pounds for having furnished the Theorems made Use of by Mr. MAYER in his Theory. Both the Tables and Theory were printed under my Inspection, and published in 1770.

MAYER's Tables of the Sun were used in the Computations of the NAUTICAL ALMANAC from its first beginning in 1767 to that of 1804, inclusive. From the NAUTICAL ALMANAC of 1767 to that of 1776, both inclusive, or the first ten Years, MAYER's Lunar Tables were made use of. But from the NAUTICAL ALMANAC of 1777 to that of 1788, both inclusive, or the next twelve Years, the Moon's Place was inserted as calculated from new Tables, improved from MAYER's Tables, composed by the late Mr. CHARLES MASON, under my direction, from Calculations made by Order of the Board of Longitude upon the Series of lunar Observations made by the late Dr. BRADLEY, and published in the NAUTICAL ALMANAC of 1774; in which new Tables the Epoch of the Moon's mean Longitude is 1" less, that of the Apogee is 56" less, and that of the ascending Node 45" more than in MAYER's printed Tables, and the Equations are calculated to Tenths of a Second; and moreover one new Equation is introduced, whose Argument is the mean Distance of the Moon from the Sun's Apogee, and Maximum is 16",4. But from the NAUTICAL ALMANAC of 1789 to that of 1804, both inclusive, the Moon's Place was inserted as calculated from new Tables still farther corrected by Mr. MASON, entitled by him, TABLES of 1780, as having been completed about that Time, being rendered more exact than the former by the Addition of eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory as to the Arguments, but settled as to the *Maxima*, from the said Observations, and the whole being calculated to Tenths of a Second. However the 18th Equation of these Tables was not used, as it was doubtful whether such an Equation should arise from the Theory of Gravity. Moreover the Epochs of the Sun's Longitude in MAYER's Tables and of the Moon's Longitude and mean

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anomaly contained in MASON'S Tables of 1780, were diminished at the rate of 10" in a hundred Years, reckoned from the year 1756, in the Calculations of the NAUTICAL ALMANACS from 1797 to 1804, both inclusive. Also the Longitudes of the Stars, used in computing their distances from the Moon, were carried on from Dr. BRADLEY'S Catalogue of the year 1760, by subtracting 50",35 from it for each year between 1756 and 1760, to reduce that Catalogue back to the beginning of 1756, and then adding at the rate of 50",20 for the Procession of the Equinoxes for each year elapsed after 1756, and applying the Correction of Secular Motion derived from the 44th of the folio Tables annexed to the First Volume of my Astronomical Observations.

The Distances of the Stars from the Moon had been computed till the end of the EPHEMERIS of 1802 from a set of folio Tables, constructed for each Star, according to its respective Latitude in 1780; but the distances in the EPHEMERIS of 1803 and 1804 were computed from the Latitudes corrected by my 45th Table, by making use of TAYLOR'S Tables of Logarithmic Sines and Tangents to every Second of the Quadrant; and the like method will be followed in future.

The Calculations of the Planets Places were made for the EPHEMERIS from 1780 to 1804 by the Tables contained in the Second Edition of M. DE LA LANDE'S Astronomy; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN'S Tables, which make a part of those Tables; excepting the Eclipses of Jupiter's Second Satellite, which were computed from the EPHEMERIS of 1781 to that of 1804, from new Tables of Mr. WARGENTIN published at the End of the Nautical Almanac of 1779.

In the Year 1792, came out the Third Edition of M. DE LA LANDE'S Astronomy, which he was pleased to make me a present of, containing new Tables of the Sun, Moon, and Planets, and of the Eclipses of Jupiter's Satellites. These Tables are constructed upon the best Observations, and upon the Physical Theories of M. LA GRANGE and M. DE LA PLACE, founded upon Sir ISAAC NEWTON'S Principles of Gravity. The Tables of the Sun were computed by M. DE LAMBRE, entirely from my Observations; the Tables of the Moon are the same with Mr. CHARLES MASON'S Tables of 1780, only substituting M. DE LA PLACE'S Acceleration instead of MAYER'S, and diminishing the mean Secular Motion by 23". The Tables of Mercury, Venus, and Mars, were constructed by M. LA LANDE. The Tables of Jupiter and Saturn were constructed by M. DE LAMBRE from the Theory of M. DE LA PLACE, who has accounted for the great Inequalities of their Motion to great exactness. The Tables of the Planet Herschel, called the Georgian Planet by us, were also calculated by M. DE



# P R E F A C E.

LAMBRE according to the Method of M. DE LA PLACE's Theory of Jupiter and Saturn. The Tables for calculating the Eclipses of Jupiter's Satellites were constructed by M. DE LAMBRE upon M. DE LA PLACE's elaborate Theory, and agree with Observation to surprising exactness. The learned world are much indebted to Mr. CHARLES MASON, M. LA GRANGE, M. DE LA PLACE, M. LA LANDE, and M. DE LAMBRE, for these valuable improvements in the Astronomical Tables. May I flatter myself, that I also have contributed my share to this great Work, by directing Mr. MASON in the improvement of the Lunar Tables by precise Rules, and pointing out to him the Equations contained in MAYER's Theory, though omitted in his Tables, to be ascertained by BRADLEY's Observations, and by supplying a variety of Observations, from which, in conjunction with others, this great Work has been completed.

In the beginning of the Year 1798, M. DE LA PLACE favoured me with an Extract of the Connoissance des Temps of the eighth Year, containing his Discovery of Secular Equations of the Moon's Apogee and Node, retarding their Motions. Hence he found an Acceleration of the Mean Anomaly of the Moon of  $48''$ , 16, and of the Longitude of the Moon's Node of  $7''$ , 84 in 100 Years, as he had before found an Acceleration of the Mean Longitude of the Moon of  $11''$ , 2. At the same time he stated the Secular Mean Motion in Longitude greater by  $4''$ , 7, the Secular Mean Motion of Anomaly greater by  $8'$ , 30'', and the Secular Retrograde Motion of the Node less by  $2'$ , 50'', than in LA LANDE's Tables. Hence I found, for the use of the Computers of the NAUTICAL ALMANAC, that the Mean Longitude of the Moon to Mean Noon in the beginning of 1805, by the Meridian of Greenwich, was  $9^{\circ}$ ,  $5'$ ,  $49'$ ,  $55''$ , 8; the Mean Anomaly of the Moon  $0^{\circ}$ ,  $27'$ ,  $1'$ ,  $37''$ , 7; and Mean Longitude of the Node  $9^{\circ}$ ,  $26'$ ,  $35'$ ,  $44''$ , 8; in which are included the aforesaid Accelerations and Corrections of M. DE LA PLACE; these Numbers were used in the Computation of this EPHEMERIS. The Mean Obliquity of the Ecliptic at the beginning of the Year is taken  $23^{\circ}$ ,  $27'$ ,  $49''$ , 1, and corrected by my Folio Tables 21 and 31. The Sun's Longitude is computed from LA LANDE's Tables, except that my Equation of the Moon is used with Maximum  $7''$ , 1; my Equation of Equinoctial Points with Maximum  $17''$ , 9, and my Equation of Venus composed from the Formula  $5''37 \times \sin$ ,  $\text{Arg} - 6''02 \times S$ ,  $2 \text{ Arg} - 0''75 \times S$ ,  $3 \text{ Arg} - 0''21 \times S$ ,  $4 \text{ Arg}$ . which I computed from the Theory of Gravity, instead of the corresponding ones in LA LANDE's Tables. The Lunar Equations are made use of, as in Mr. CHARLES MASON's Tables, omitting the 18th Equation; as it was thought doubtful whether it should arise from the Theory of Gravity; the Parallaxes are taken from MAYER's Tables.

## P R E F A C E.

The Places of the Planets, and the Times of the Eclipses of Jupiter's Satellites are calculated from the same Tables annexed to the Third Edition of LA LANDE's Astronomy. The latter are set down to Mean Time instead of Apparent Time, as formerly.

All the Articles of the EPHEMERIS were computed by two separate Persons, and examined by a third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, with its Proportional Logarithm; which were computed for Noon by one Person, and for Midnight by another. The Truth of these Calculations was ascertained by Means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

NEVIL MASKELYNE,  
ASTRONOMER ROYAL.

GREENWICH,  
*April 27, 1801.*

# EXPLANATION OF THE CHARACTERS USED IN THE ASTRONOMICAL EPHEMERIS.

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## *The P L A N E T S, &c.*

- |              |             |
|--------------|-------------|
| ☉ The Sun.   | ♂ Mars.     |
| ☾ The Moon.  | ♃ Jupiter.  |
| ☿ Mercury.   | ♄ Saturn.   |
| ♀ Venus.     | ♅ Georgian. |
| ♁ The Earth. |             |
- ☊ The Moon's, or any other Planet's Ascending Node.  
 ☋ The Descending Node.  
 ☌ Conjunction, or Planets situated in the same Longitude.  
 ☍ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.  
 ☎ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.  
 N. North.      Inf. Inferior.      Im. Immerfion.  
 S. South.      Sup. Superior.      Em. Emerfion.
- 

## *S I G N S of the Z O D I A C.*

- |             |                  |
|-------------|------------------|
| S.          | S.               |
| 0 ♈ Aries.  | 6 ♎ Libra        |
| 1 ♉ Taurus. | 7 ♏ Scorpio.     |
| 2 ♊ Gemini. | 8 ♐ Sagittarius. |
| 3 ♋ Cancer. | 9 ♑ Capricornus. |
| 4 ♌ Leo.    | 10 ♒ Aquarius.   |
| 5 ♍ Virgo.  | 11 ♓ Pisces.     |

# PRINCIPAL ARTICLES

G R

## THE ALMANAC OF 1805

### Chronological Cycles.

### Ember Days.

Dominical Letter	F	March	6, 8 and 9
Lunar Cycle, or Golden Numb.	1	June	5, 7 and 8
Epaet	0	September	18, 20 and 21
Solar Cycle	12	December	18, 20 and 21
Roman Indiction	8		

### MOVEABLE FEASTS.

Septuagesima Sunday	Feb. 10	Low Sunday	Apr. 21
Quinquagesima Sunday	Feb. 24	Rogation Sunday	May 19
Asc. Wed. or 1st Day of Lent	Feb. 27	Asc. Day, or Holy Thurs.	May 23
Mid-Lent Sunday	Mar. 24	Whit Sunday	June 2
Palm Sunday	Apr. 7	Trinity Sunday	June 9
EASTER DAY	Apr. 14	Advent Sunday	Dec. 1

### T E R M S.

Names	London.		Oxford.		Cambridge.	
	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent	Jan. 23	Feb. 12	Jan. 14	April 6	Jan. 13	Div. Feb. 23 Noon.
						April 5
Easter	May 1	May 27	April 24	May 30	April 24	Div. May 30 Noon.
						July 5
Trinity, or Asc.	June 14	July 3	June 12	July 13		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 17	Oct. 10	Div. Nov. 12 Midn.
						Dec. 16

N. B. Omitted in July, p. 73.

Days.

1. In 3 w. of H. Tr. 4. r.

3. Trinity Term ends.

Oxford Asc July 8. — Camb. Commencement July 2.

# O B L I Q U I T Y, &c.

Obliquity of the Ecliptic.	1805.	Equation of Equinoctial Points.
D. M. S.		S.
23. 27. 52, 8	Jan. 1.	+ 16, 0
23. 27. 52, 9	Apr. 1.	+ 16, 6
23. 27. 51, 2	July 1.	+ 17, 1
23. 27. 51, 1	Oct. 1.	+ 17, 4
23. 27. 49, 2	Dec. 31.	+ 17, 7

## SOLAR AND LUNAR ECLIPSES IN THE YEAR 1805.

Jan. 14. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning of the Eclipse	18. 42
Beginning of total Darkness	19. 40
☉ rises	19. 53
Ecliptic 8	20. 29
Middle	20. 29½
End of total Darkness	21. 19
End of the Eclipse	22. 17

Digits eclipsed, 20°. 52', in N. Part of ☉'s Shadow.

Jan. 30. *SUN eclipsed, invisible at Greenwich.*  
 ☉ at 6<sup>h</sup>. 58', in Long. 10°. 10'. 33', ☉'s Lat. 1°. 21' N.

June 26. *SUN eclipsed, invisible at Greenwich.*  
 ☉ at 11<sup>h</sup>. 13', in Long. 3°. 4'. 47', ☉'s Lat. 1° 4½' N.

July 11. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning of the Eclipse	7. 3½
☉ rises	8. 3
Beginning of total Darkness	8. 13½
Middle	8. 58½
Ecliptic 8	9. 1½
End of total Darkness	9. 43½
End of the Eclipse	10. 53½

Digits eclipsed, 16°. 26', in N. Part of ☉'s Shadow.

July 25. *SUN eclipsed, invisible at Greenwich.*  
 ☉ at 18<sup>h</sup>. 21', in Long. 4°. 2°. 44', ☉'s Lat. 1°. 28½' S.

Dec. 20. *SUN eclipsed, invisible at Greenwich.*  
 ☉ at 12<sup>h</sup>. 7½', in Long. 8°. 28°. 46', ☉'s Lat. 47½' South.  
 ☉ will be centrally eclipsed on the Meridian at  
 12<sup>h</sup>. 9'. 35". in Long. 177°. 36½' East, and Lat. 85°½' S.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			☾ First Quarter ----- 8. 5. 11
			☉ Full Moon ----- 14. 20. 29
			☾ Last Quarter ----- 22. 2. 45
			● New Moon ----- 30. 6. 58
			Other Phenomena.
			D. H. M.
Tu.	1	Circumcision.	14. - - 24 λ ♈, * 45 S.
W.	2		4. 14. 47 ☾ 0 ☾
Th.	3		8. 15. 35 ☾ 7 ✕
F.	4		10. 23. 18 ☾ 7 Pleiadum.
Sa.	5		12. - - 8 Stationary
Sun.	6	Epiphany.	12. 16. 35 ☾ 125 8
M.	7		13. 15. 56 ☾ 12 II
Tu.	8	Lucian.	14. 5. 47 ☾ 12 II
W.	9		14. - - ☾ eclipsed, partly visible.
Th.	10		16. 12. 23 ☾ 12 S.
F.	11		16. 16. 48 ☾ 0 S.
Sa.	12		17. 1. 25 ☾ π S.
Sun.	13	1st Su. after Ep. Hil. Cam.	17. - - 24 β ♍, * 9 N.
M.	14	Oxf. T. begins. [T. beg.	19. 21. 48 ☉ enters ☾
Tu.	15		24. 10. 56 ☾ π m
W.	16		24. 20. 48 ☾ 7 m
Th.	17		25. 0. 47 ☾ α m
F.	18	2d Cha. b.d. kept, Prisca.	25. - - ☽ Stationary
Sa.	19		26. - - 24 γ m, * 47 N.
Sun.	20	2d Sun. aft. Ep. Fabian.	27. - - ☽ Stationary.
M.	21	In 8 days of S. Hil. 1 ret.	27. 6. 30 ☾ λ ♏
Tu.	22	Vincent. [Agnes.	30. - - ☉ eclipsed, invisible.
W.	23	Hilary Term begins.	30. - - ☽ 0 ♏, * 28 N.
Th.	24		
F.	25	Conversion of St. Paul.	
Sa.	26		
Sun.	27	3d Sun. aft. Ep. Pr. Au. Fr.	
M.	28	In 15 days of S. H. 2r. [born.	
Tu.	29		
W.	30	K. Charles I. Martyr.	
Th.	31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	D
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S
Tu.	1	9. 10. 44. 3	18. 46. 42, 3	23. 1. 49	3. 56, 5	28
W.	2	9. 11. 45. 16	18. 51. 7, 3	22. 56. 39	4. 24, 9	28
Th.	3	9. 12. 46. 28	18. 55. 32, 0	22. 51. 2	4. 53, 0	27
F.	4	9. 13. 47. 40	18. 59. 56, 3	22. 44. 57	5. 20, 6	27
Sa.	5	9. 14. 48. 52	19. 4. 20, 1	22. 38. 26	5. 47, 8	26
Sun.	6	9. 15. 50. 4	19. 8. 43, 4	22. 31. 27	6. 14, 4	26
M.	7	9. 16. 51. 15	19. 13. 6, 2	22. 24. 2	6. 40, 6	25
Tu.	8	9. 17. 52. 25	19. 17. 28, 6	22. 16. 11	7. 6, 3	25
W.	9	9. 18. 53. 34	19. 21. 50, 4	22. 7. 53	7. 31, 5	24
Th.	10	9. 19. 54. 43	19. 26. 11, 6	21. 59. 9	7. 56, 1	24, 0
F.	11	9. 20. 55. 51	19. 30. 32, 2	21. 50. 0	8. 20, 1	23, 4
Sa.	12	9. 21. 56. 59	19. 34. 52, 2	21. 40. 26	8. 43, 5	22, 8
Sun.	13	9. 22. 58. 5	19. 39. 11, 6	21. 30. 26	9. 6, 3	22, 0
M.	14	9. 23. 59. 11	19. 43. 30, 2	21. 20. 1	9. 28, 3	21, 4
Tu.	15	9. 25. 0. 17	19. 47. 48, 3	21. 9. 12	9. 49, 7	20, 7
W.	16	9. 26. 1. 22	19. 52. 5, 6	20. 57. 58	10. 10, 4	20, 1
Th.	17	9. 27. 2. 26	19. 56. 22, 3	20. 46. 21	10. 30, 5	19, 4
F.	18	9. 28. 3. 30	20. 0. 38, 3	20. 34. 20	10. 49, 9	18, 6
Sa.	19	9. 29. 4. 33	20. 4. 53, 5	20. 21. 55	11. 8, 5	17, 9
Sun.	20	10. 0. 5. 35	20. 9. 8, 0	20. 9. 7	11. 26, 4	17, 1
M.	21	10. 1. 6. 37	20. 13. 21, 7	19. 55. 57	11. 43, 5	16, 4
Tu.	22	10. 2. 7. 39	20. 17. 34, 7	19. 42. 25	11. 59, 9	15, 7
W.	23	10. 3. 8. 40	20. 21. 46, 9	19. 28. 30	12. 15, 6	14, 9
Th.	24	10. 4. 9. 41	20. 25. 58, 5	19. 14. 14	12. 30, 5	14, 1
F.	25	10. 5. 10. 40	20. 30. 9, 2	18. 59. 37	12. 44, 6	13, 3
Sa.	26	10. 6. 11. 39	20. 34. 19, 1	18. 44. 39	12. 57, 9	12, 5
Sun.	27	10. 7. 12. 38	20. 38. 28, 2	18. 29. 20	13. 10, 4	11, 7
M.	28	10. 8. 13. 35	20. 42. 36, 5	18. 13. 41	13. 22, 1	10, 9
Tu.	29	10. 9. 14. 32	20. 46. 44, 0	17. 57. 43	13. 33, 0	10, 1
W.	30	10. 10. 15. 27	20. 50. 50, 6	17. 41. 25	13. 43, 1	9, 3
Th.	31	10. 11. 16. 22	20. 54. 56, 5	17. 24. 49	13. 52, 4	

Days	Time of $\odot$ 's Semi-diam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10, 9	16. 17, 8	2. 32, 9	9. 992663	9. 26. 33
7	1. 10, 5	16. 17, 7	2. 32, 9	9. 992708	9. 26. 14
13	1. 10, 1	16. 17, 4	2. 32, 8	9. 992831	9. 25. 54
19	1. 9, 6	16. 16, 9	2. 32, 6	9. 993050	9. 25. 35
25	1. 8, 9	16. 16, 2	2. 32, 4	9. 993362	9. 25. 16

## ECLIPSES of the SATELLITES of JUPITER. MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	2. 19. 5	4	6. 22. 16	6	20. 3. 18 Im.
3	20. 47. 26	7	19. 39. 23	6	22. 3. 2 E.
5	15. 15. 44	11	8. 56. 54	14	0. 1. 29 Im.
7	9. 44. 6	14	22. 13. 57	14	2. 1. 38 E.
9	4. 12. 24	18	11. 31. 17	21	3. 59. 1 Im.
10	22. 40. 45	22	0. 48. 17	21	5. 59. 36 E.
*12	17. 9. 3	25	14. 5. 29 Im.	28	7. 56. 39 Im.
14	11. 37. 24	*25	16. 20. 56 E.	28	9. 57. 48 E.
16	6. 5. 43	29	3. 22. 24 Im.		
18	0. 34. 3	29	5. 37. 52 E.		
19	19. 2. 21				
21	13. 30. 42				
23	7. 58. 59				
25	2. 27. 20				
26	20. 55. 37				
28	15. 23. 58				
30	9. 52. 16				



THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
M E R C U R Y. Inf. 820°. 16h.							
1	0. 4. 15	4. 41 S	9. 29. 18	1. 30 S	21. 47 S	1. 20	
4	0. 19. 53	3. 6	10. 22. 56	1. 1	20. 34	1. 22	
7	1. 6. 52	1. 7 S	10. 52. 46	0. 23 S	19. 13	1. 20	
10	1. 24. 57	1. 6 N	10. 72. 27	0. 25 N	18. 2	1. 13	
13	2. 13. 46	3. 16	10. 73. 34	1. 18	17. 8	0. 59	
16	3. 2. 39	5. 6	10. 9. 57	2. 14	16. 39	0. 39	
19	3. 20. 59	6. 21	10. 2. 52	3. 2	16. 37	0. 12	
22	4. 8. 14	6. 56	9. 29. 6	3. 28	16. 59	23. 35	
25	4. 24. 6	6. 56	9. 25. 36	3. 34	17. 22	23. 10	
28	5. 8. 33	6. 28	9. 23. 6	3. 21	18. 11	22. 49	
31	5. 21. 39	5. 43	9. 21. 54	2. 46	18. 47	22. 34	
V E N U S. 828°. 23h.							
1	6. 13. 5	2. 59 N	8. 5. 29	1. 44 N	19. 30 S	21. 29	
7	6. 22. 45	2. 41	8. 12. 42	1. 31	20. 51	21. 34	
13	7. 2. 23	2. 18	8. 20. 6	1. 16	21. 50	21. 39	
19	7. 12. 0	1. 51	8. 27. 49	0. 59	22. 27	21. 45	
25	7. 21. 36	1. 22	9. 4. 54	0. 43	22. 40	21. 52	
M A R S. 828°. 23h.							
1	3. 26. 39	1. 43 N	4. 18. 4	3. 48 N	19. 18 N	14. 37	
7	3. 29. 22	1. 45	4. 16. 50	4. 2	19. 39	14. 6	
13	4. 2. 5	1. 47	4. 15. 9	4. 14	20. 21	13. 34	
19	4. 4. 46	1. 48	4. 13. 6	4. 24	21. 7	13. 0	
25	4. 7. 27	1. 49	4. 10. 48	4. 30	21. 52	12. 26	
J U P I T E R. 21h.							
1	7. 20. 27	0. 59 N	7. 27. 36	0. 52 N	18. 48 S	20. 52	
7	7. 20. 55	0. 58	7. 28. 43	0. 52	19. 3	20. 31	
13	7. 21. 23	0. 58	7. 29. 46	0. 53	19. 16	20. 9	
19	7. 21. 51	0. 57	8. 0. 46	0. 53	19. 29	19. 47	
25	7. 22. 19	0. 57	8. 1. 43	0. 53	19. 39	19. 26	
S A T U R N. 6°. 03h.							
1	6. 9. 50	2. 27 N	6. 15. 41	2. 26 N	3. 56 S	18. 11	
7	6. 10. 2	2. 27	6. 15. 54	2. 28	3. 59	17. 46	
13	6. 10. 13	2. 27	6. 16. 4	2. 30	4. 1	17. 21	
19	6. 10. 25	2. 27	6. 16. 10	2. 31	4. 2	16. 55	
25	6. 10. 37	2. 27	6. 16. 12	2. 33	4. 1	16. 30	
G E O R G I A N. 10°. 22h.							
1	6. 17. 40	0. 38 N	6. 20. 41	0. 38 N	7. 30 S	18. 28	
11	6. 17. 47	0. 38	6. 20. 51	0. 38	7. 34	17. 44	
21	6. 17. 55	0. 38	6. 20. 56	0. 38	7. 36	17. 2	

		THE MOON'S							
		Longitude.				Latitude.			
Days of the Week.	Days of the Month.	Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Tu.	1	9. 15. 50. 50		9. 21. 54. 4		0. 53. 41 8		0. 20. 23 S	
W.	2	9. 27. 59. 19		10. 4. 6. 51		0. 13. 19 N		0. 47. 7 N	
Th.	3	10. 10. 16. 51		10. 16. 29. 31		1. 20. 36		1. 53. 23	
F.	4	10. 22. 45. 5		10. 29. 3. 54		2. 25. 3		2. 55. 15	
Sa.	5	11. 5. 26. 10		11. 11. 52. 8		3. 23. 32		3. 49. 33	
Sun.	6	11. 18. 22. 9		11. 24. 56. 26		4. 12. 53		4. 33. 10	
M.	7	0. 1. 35. 17		0. 8. 18. 52		4. 50. 2		5. 3. 8	
Tu.	8	0. 15. 7. 44		0. 22. 0. 58		5. 12. 11		5. 16. 52	
W.	9	0. 28. 59. 38		1. 6. 3. 16		5. 16. 58		5. 18. 19	
Th.	10	1. 13. 11. 45		1. 20. 24. 52		5. 2. 50		4. 48. 28	
F.	11	1. 27. 42. 4		2. 5. 2. 52		4. 29. 21		4. 5. 39	
Sa.	12	2. 12. 26. 37		2. 19. 52. 27		3. 37. 43		3. 5. 58	
Sun.	13	2. 27. 19. 31		3. 4. 46. 54		2. 30. 58		1. 53. 22	
M.	14	3. 12. 13. 34		3. 19. 38. 31		1. 13. 50 N		0. 38. 12 N	
Tu.	15	3. 27. 0. 40		4. 4. 19. 25		0. 7. 44 S		0. 48. 14 S	
W.	16	4. 11. 33. 41		4. 18. 42. 51		1. 27. 32		2. 4. 58	
Th.	17	4. 25. 46. 22		5. 2. 43. 53		2. 39. 58		3. 12. 6	
F.	18	5. 9. 35. 6		5. 16. 19. 54		3. 40. 58		4. 6. 15	
Sa.	19	5. 22. 58. 20		5. 29. 30. 38		4. 27. 47		4. 45. 28	
Sun.	20	6. 5. 57. 0		6. 12. 17. 48		4. 59. 15		5. 9. 11	
M.	21	6. 18. 33. 29		6. 24. 44. 29		5. 15. 15		5. 17. 35	
Tu.	22	7. 6. 51. 26		7. 6. 54. 49		5. 16. 17		5. 11. 28	
W.	23	7. 12. 55. 14		7. 18. 53. 20		5. 3. 17		4. 51. 50	
Th.	24	7. 24. 49. 41		8. 0. 44. 51		4. 37. 21		4. 19. 56	
F.	25	8. 6. 39. 24		8. 12. 33. 53		3. 59. 48		3. 37. 6	
Sa.	26	8. 18. 28. 51		8. 24. 24. 47		3. 12. 3		2. 44. 54	
Sun.	27	9. 0. 22. 6		9. 6. 21. 15		2. 15. 50		1. 45. 8	
M.	28	9. 12. 22. 35		9. 18. 26. 23		1. 13. 6		0. 40. 1 S	
Tu.	29	9. 24. 32. 56		10. 0. 42. 28		0. 6. 16 S		0. 27. 51 N	
W.	30	10. 6. 55. 8		10. 13. 11. 6		1. 1. 53 N		1. 35. 27	
Th.	31	10. 19. 30. 25		10. 25. 53. 8		2. 8. 7		2. 39. 29	

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Tu.	1	2	0. 23	287. 19	293. 43	23. 25 S	22. 1 S
W.	2	3	1. 11	300. 2	306. 15	20. 28	18. 29
Th.	3	4	1. 57	312. 22	318. 22	16. 23	14. 7
F.	4	5	2. 42	324. 18	330. 10	11. 40	9. 4
Sa.	5	6	3. 25	336. 0	341. 49	6. 22	3. 35 S
Sun.	6	7	4. 9	347. 40	353. 33	0. 44 S	2. 10 N
M.	7	8	4. 54	359. 32	5. 37	5. 4 N	7. 56
Tu.	8	9	5. 41	11. 53	18. 20	10. 45	13. 29
W.	9	10	6. 32	25. 0	31. 55	16. 4	28. 27
Th.	10	11	7. 28	39. 7	46. 35	20. 37	22. 30
F.	11	12	8. 28	54. 19	62. 17	24. 2	25. 11
Sa.	12	13	9. 31	70. 27	78. 43	25. 54	26. 10
Sun.	13	14	10. 36	87. 2	95. 17	25. 57	25. 16
M.	14	15	11. 38	103. 25	111. 21	24. 8	22. 34
Tu.	15	16	12. 37	119. 2	126. 28	20. 39	18. 25
W.	16	17	13. 30	133. 36	140. 29	15. 56	13. 15
Th.	17	18	14. 20	147. 7	153. 32	10. 26	7. 31
F.	18	19	15. 6	159. 45	165. 50	4. 34 N	1. 37 N
Sa.	19	20	15. 50	171. 47	177. 39	1. 18 S	4. 10 S
Sun.	20	21	16. 34	183. 28	189. 16	6. 57	9. 36
M.	21	22	17. 18	195. 5	200. 55	12. 8	14. 31
Tu.	22	23	18. 3	206. 48	212. 46	16. 43	18. 44
W.	23	24	18. 49	218. 50	224. 59	20. 33	22. 8
Th.	24	25	19. 38	231. 15	237. 36	23. 29	24. 34
F.	25	26	20. 27	244. 3	250. 35	25. 23	25. 55
Sa.	26	27	21. 18	257. 10	263. 47	26. 9	26. 6
Sun.	27	28	22. 8	270. 24	277. 1	25. 44	25. 4
M.	28	29	22. 57	283. 35	290. 4	24. 6	22. 51
Tu.	29	30	23. 45	296. 30	302. 49	21. 20	19. 34
W.	30	1	0	309. 3	315. 11	17. 34	15. 21
Th.	31	2	0. 31	321. 15	327. 14	12. 57	10. 24

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Tu.	1	14. 54	14. 57	54. 42	54. 52	5173	5159
W.	2	15. 0	15. 3	55. 3	55. 14	5145	5130
Th.	3	15. 7	15. 10	55. 27	55. 40	5114	5097
F.	4	15. 14	15. 18	55. 54	56. 10	5079	5058
Sa.	5	15. 23	15. 27	56. 26	56. 43	5037	5015
Sun.	6	15. 32	15. 37	57. 1	57. 20	4992	4968
M.	7	15. 43	15. 49	57. 41	58. 1	4942	4917
Tu.	8	15. 54	16. 0	58. 22	58. 43	4891	4865
W.	9	16. 6	16. 11	59. 4	59. 25	4839	4813
Th.	10	16. 17	16. 22	59. 44	60. 2	4790	4769
F.	11	16. 26	16. 30	60. 19	60. 32	4748	4733
Sa.	12	16. 33	16. 35	60. 43	60. 50	4719	4711
Sun.	13	16. 36	16. 35	60. 54	60. 55	4707	4708
M.	14	16. 34	16. 32	60. 48	60. 40	4714	4723
Tu.	15	16. 28	16. 24	60. 27	60. 11	4739	4758
W.	16	16. 18	16. 12	59. 51	59. 28	4782	4810
Th.	17	16. 5	15. 58	59. 3	58. 37	4841	4872
F.	18	15. 51	15. 44	58. 10	57. 43	4906	4940
Sa.	19	15. 36	15. 29	57. 16	56. 50	4973	5006
Sun.	20	15. 22	15. 16	56. 25	56. 2	5038	5068
M.	21	15. 10	15. 5	55. 40	55. 21	5097	5122
Tu.	22	15. 0	14. 56	55. 4	54. 50	5144	5162
W.	23	14. 53	14. 51	54. 37	54. 28	5179	5191
Th.	24	14. 49	14. 48	54. 21	54. 17	5201	5206
F.	25	14. 47	14. 47	54. 15	54. 15	5209	5209
Sa.	26	14. 48	14. 49	54. 18	54. 22	5205	5199
Sun.	27	14. 51	14. 53	54. 29	54. 37	5190	5179
M.	28	14. 56	14. 59	54. 47	54. 58	5166	5152
Tu.	29	15. 2	15. 6	55. 10	55. 23	5136	5119
W.	30	15. 9	15. 13	55. 37	55. 51	5100	5082
Th.	31	15. 17	15. 21	56. 5	56. 20	5064	5045

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
α Arietis.	2	-	-	-	-	-	-	-	-	90. 40. 40	89. 8. 21	87. 35. 53	86. 3. 16				
	3	84. 30. 30	82. 57. 35	81. 24. 30	79. 51. 16	78. 17. 52	76. 44. 19	75. 10. 35	73. 36. 41								
	4	72. 2. 37	70. 28. 21	68. 53. 55	67. 19. 18	65. 44. 30	64. 9. 31	62. 34. 21	60. 59. 0								
	5	59. 23. 27	57. 47. 42	56. 11. 46	54. 35. 37	52. 59. 17											
	5	-	-	-	-	-	-	-	-	85. 36. 8	84. 0. 22	82. 24. 23	80. 48. 11				
Aldebaran.	6	79. 11. 45	77. 35. 6	75. 58. 13	74. 21. 6	72. 43. 46	71. 6. 11	69. 28. 22	67. 50. 19								
	7	66. 12. 3	64. 33. 32	62. 54. 48	61. 15. 50	59. 36. 39	57. 57. 13	56. 17. 34	54. 37. 43								
	8	52. 57. 39	51. 17. 22	49. 36. 54	47. 56. 16	46. 15. 28	44. 34. 28	42. 53. 23	41. 12. 12								
	9	39. 30. 56	37. 49. 33	36. 8. 13	34. 26. 57	32. 45. 48	31. 4. 38	29. 23. 51	27. 43. 31								
	10	26. 3. 44	24. 24. 43	22. 46. 35	21. 9. 29	19. 33. 29											
Pollux.	10	-	-	-	-	-	-	-	-	59. 49. 27	58. 1. 41	56. 13. 40	54. 25. 26				
	11	52. 36. 57	50. 48. 16	48. 59. 26	47. 10. 26	45. 21. 16	43. 31. 56	41. 42. 32	39. 53. 4								
	12	38. 3. 32	36. 13. 58	34. 24. 27	32. 35. 0	30. 45. 35											
	12	-	-	-	-	-	-	-	-	67. 15. 59	65. 24. 19	63. 32. 35	61. 40. 47				
Regulus.	13	59. 48. 56	57. 57. 2	56. 5. 8	54. 13. 14	52. 21. 21	50. 29. 29	48. 37. 42	46. 46. 0								
	14	44. 54. 22	43. 2. 51	41. 11. 30	39. 20. 18	37. 29. 16	35. 38. 25	33. 47. 50	31. 57. 31								
	15	30. 7. 26	28. 17. 37	26. 28. 11	24. 39. 9	22. 50. 30	21. 2. 26	19. 14. 43	17. 27. 40								
	16	15. 41. 10															
		-	-	-	-	-	-	-	-								

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica $\mu$	16	69.	31. 51	67.	43. 51	65.	56. 14	64.	8. 58	62.	22. 5	60.	35. 34	58.	49. 27	57.	3. 44
	17	55.	18. 25	53.	33. 30	51.	49. 1	50.	4. 57	48.	21. 18	46.	38. 6	44.	55. 20	43.	13. 1
	18	41.	31. 9	39.	49. 44	38.	8. 46	36.	28. 15	34.	48. 12	33.	8. 56	31.	29. 29	29.	50. 50
	19	28.	12. 39	26.	34. 57	24.	57. 44	23.	21. 1	21.	44. 48						
Antares.	19	-	-	-	-	-	-	-	-	67.	16. 47	65.	39. 55	64.	3. 26	62.	27. 20
	20	60.	51. 36	59.	16. 13	57.	41. 12	56.	6. 31	54.	32. 11	52.	58. 11	51.	24. 29	49.	51. 6
	21	48.	18. 2	46.	45. 16	45.	12. 47	43.	40. 34	42.	8. 38	40.	56. 57	39.	5. 30	37.	34. 16
	22	36.	3. 17														
The Sun.	19	-	-	-	-	-	-	-	-	119.	57. 35	118.	28. 19	116.	59. 25	115.	30. 55
	20	114.	2. 46	112.	34. 59	111.	7. 32	109.	40. 27	108.	13. 42	106.	47. 17	105.	21. 11	103.	55. 24
	21	102.	29. 55	101.	4. 45	99.	39. 51	98.	15. 14	96.	50. 53	95.	26. 47	94.	2. 55	92.	39. 17
	22	91.	15. 53	89.	52. 43	88.	29. 45	87.	6. 58	85.	44. 24	84.	22. 0	82.	59. 45	81.	37. 40
	23	80.	15. 44	78.	53. 56	77.	32. 15	76.	16. 41	74.	49. 13	73.	27. 52	72.	6. 34	70.	45. 21
	24	69.	24. 13	68.	3. 8	66.	42. 5	65.	21. 5	64.	0. 7	62.	39. 11	61.	18. 15	59.	57. 20
	25	58.	36. 24	57.	15. 27	55.	54. 28	54.	33. 28	53.	12. 25	51.	51. 20	50.	30. 11	49.	8. 58
	26	47.	47. 41	46.	26. 19	45.	4. 52	43.	43. 21	42.	21. 42	40.	59. 59	39.	38. 8	38.	16. 11
	27	36.	54. 7														

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	4	39.	1. 12	40.	28. 8	41.	55. 17	43.	22. 36	44.	50. 8	46.	17. 51	47.	45. 47	49.	13. 55
	5	50.	42. 15	52.	10. 47	53.	39. 33	55.	8. 32	56.	37. 44	58.	7. 11	59.	36. 51	61.	6. 46
	6	62.	36. 54	64.	7. 18	65.	37. 57	67.	8. 52	68.	40. 1	70.	11. 27	71.	43. 9	73.	15. 8
	7	74.	47. 22	76.	19. 53	77.	52. 42	79.	25. 47	80.	59. 10	82.	32. 51	84.	6. 49	85.	41. 5
	8	87.	15. 40	88.	50. 33	90.	25. 45	92.	1. 15	93.	37. 3	95.	13. 11	96.	49. 37	98.	26. 23
	9	100.	3. 27	101.	40. 50	103.	18. 32	104.	56. 33	106.	34. 53	108.	13. 31	109.	52. 28	111.	31. 43
α Pegasi.	10	113.	11. 17	114.	51. 11	116.	31. 21	118.	11. 50	119.	52. 36	121.	33. 39	36.	37. 41	38.	12. 1
	8	-	-	-	-	-	-	-	-	33.	32. 14	35.	4. 24	36.	37. 41	38.	12. 1
	9	39.	47. 20	41.	23. 36	43.	0. 42	44.	38. 37	46.	17. 20	47.	56. 42	49.	36. 41	51.	17. 19
	10	52.	58. 34	54.	40. 21	56.	22. 39	58.	5. 27	59.	48. 45	61.	32. 30	63.	16. 38	65.	1. 9
α Arietis.	11	66.	46. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11	23.	13. 23	25.	0. 52	26.	48. 48	28.	37. 11	30.	26. 0	32.	15. 13	34.	4. 44	35.	54. 34
	12	37.	44. 43	39.	35. 6	41.	25. 40	43.	16. 26	45.	7. 24	46.	58. 32	48.	49. 46	50.	41. 7
Aldebaran.	13	52.	32. 35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13	21.	45. 6	23.	26. 48	25.	9. 39	26.	53. 33	28.	38. 24	30.	24. 4	32.	10. 23	33.	57. 16
	14	35.	44. 38	37.	32. 11	39.	19. 56	41.	7. 54	42.	56. 3	44.	44. 11	46.	32. 20	48.	20. 29
	15	50.	8. 39	51.	56. 41	53.	44. 34	55.	32. 19	57.	19. 56	59.	7. 21	60.	54. 31	62.	41. 27
	16	64.	28. 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Stars Names.	Days	Noon.	III <sup>b</sup> .	VI <sup>b</sup> .	IX <sup>b</sup> .	Midnight.	XV <sup>b</sup> .	XVIII <sup>b</sup> .	XXI <sup>b</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	16	22. 29. 53	24. 14. 9	25. 58. 25	27. 42. 43	29. 27. 1	31. 11. 16	32. 55. 22	34. 39. 19
	17	36. 23. 7	38. 6. 36	39. 49. 48	41. 32. 43	43. 15. 20	44. 57. 36	46. 39. 30	48. 21. 4
	18	50. 2. 16	51. 43. 6	53. 23. 33	55. 3. 36	56. 43. 16			
Regulus.	18	- - -	- - -	- - -	- - -	19. 43. 14	21. 22. 4	23. 0. 38	24. 38. 54
	19	26. 16. 54	27. 54. 36	29. 31. 58	31. 9. 1	32. 45. 45	34. 22. 7	35. 58. 8	37. 33. 49
	20	39. 9. 10	40. 44. 11	42. 18. 52	43. 53. 14	45. 27. 17	47. 1. 1	48. 34. 26	50. 7. 34
	21	51. 40. 24	53. 12. 56	54. 45. 12	56. 17. 12	57. 48. 57	59. 20. 27	60. 51. 43	62. 22. 46
	22	63. 53. 35	65. 24. 11	66. 54. 35	68. 24. 48	69. 54. 49	71. 24. 40	72. 54. 20	74. 23. 53
Spica $\eta$	23	75. 53. 15							
	23	21. 57. 20	23. 25. 49	24. 54. 15	26. 22. 39	27. 51. 1	29. 19. 22	30. 47. 41	32. 15. 58
	24	33. 44. 15	35. 12. 28	36. 40. 42	38. 8. 57	39. 37. 10	41. 5. 22	42. 33. 36	44. 1. 50
	25	45. 30. 6	46. 58. 23	48. 26. 43	49. 55. 5	51. 23. 31	52. 52. 0	54. 20. 33	55. 49. 11
	26	57. 17. 53	58. 46. 40	60. 15. 33	61. 44. 32	63. 13. 37			
Antares.	26	- - -	- - -	- - -	- - -	17. 25. 36	18. 54. 55	20. 24. 21	21. 53. 55
	27	23. 23. 36	24. 53. 25	26. 23. 23	27. 53. 30	29. 23. 45	30. 54. 9	32. 24. 43	33. 55. 26
	28	35. 26. 19	36. 57. 21	38. 28. 34	39. 59. 57	41. 31. 31			



CONFIGURATIONS of the SATELLITES of JUPITER  
at VI o'Clock in the *Morning*.

1	2 ●			3.	1.	○		4.
2	4 ●		.3	.2		○	1.	
3				4.	.3	.2	○	.2
4			4.				○	1. 3. 2.
5		4.			2.	.1	○	.3
6	4.				.2		○	3. 1 ●
7	.4						○	3. 1. 2.
8		.4		1.	1.		○	2. 1.
9			3. .4	2.			○	.1
10			.3	.1 .4			○	.2
11							○	.3 1. .4 2.
12				2.	.1		○	.3 .4
13	1 ●			.2			○	3. .4
14							○	.1 3. .2 .4
15				3.	1.		○	2. 4.
16			3.	2.			○	.1 4.
17			.3	- 1.	.2		○	4.
18	3. ○						○	1. 4. 2.
19	4 ●			.1	.2		○	.3
20			4.				○	1. 3.
21	1. ○	4.					○	.2 3.
22	4.				3.	1.	○	2.
23	4.		3.	2.			○	.1
24	.4		.3		1.	.2	○	
25		.4			.3		○	1. .2
26			.4	.1	2.		○	.3
27			.2	.4			○	1. .3
28				.1			○	.2 .4 3.
29	1 ●				3.		○	2. .4
30			3.	2.			○	.1 .4
31			.3		.2		○	.4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M. ☾ First Quarter ---- 6. 14. 9 ○ Full Moon ---- 13. 8. 42 ☾ Last Quarter ---- 20. 23. 22 ● New Moon ---- 28. 22. 29
F. Sa.	1 2	Purif. of B.V. Mary.	Other Phenomena.
Sun. M. Tu. W. Th. F. Sa.	3 4 5 6 7 8 9	4th Sunday after Ep. [Blas. On mor. of Pur. Agatha. 3 ret.]	D. H. M. 4. 21. 2 ☾ ♄ 7. 5. 33 1/4 I. ♄ Pleia. * 1 1/4 N. of ☾'s C. 7. 6. 48 1/4 E. ♄ 0 1/2 N. N. B. The ☾ occults others of the Pleiades. 9. 0. 44 ☾ 125 ♄ 10. 0. 53 ☾ ♄ 10. 15. 51 1/4 I. ♄ * 15' S. 10. 16. 20 1/4 E. ♄ * 11 1/2 S. of ☾'s C. 12. - - ♄ ♄ diff. Lat. 48' 12. 22. 43 ☾ ♄ ♄ 13. 11. 47 ☾ ♄ ♄ 15. 7. 39 ☾ ♄ ♄ 18. 12. 35 ☾ enters ♄ 20. 18. 51 ☾ ♄ ♄ 21. 4. 41 ☾ ♄ ♄ 21. - - ♄ 0 ♄, * 55' S. 21. 8. 39 ☾ ♄ ♄ 23. 14. 28 ☾ ♄ ♄
Sun. M. Tu. W. Th. F. Sa.	10 11 12 13 14 15 16	Septuagesima Sunday. In 8 Days of Purif. 4 ret. Hilary Term ends. Valentine.	
Sun. M. Tu. W. Th. F. Sa.	17 18 19 20 21 22 23	Sexagesima Sunday.  Camb. T. div. n.	
Sun. M. Tu. W. Th.	24 25 26 27 28	Quinq. Sun. St. Matthias [Pr. Adol. Fred. b.] Ash-Wednesday.	

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	10. 12. 17. 15	20. 59. 1, 5	17. 7. 54	14. 0, 8	7, 6
Sa.	2	10. 13. 18. 7	21. 3. 5, 7	16. 50. 41	14. 8, 4	6, 7
Sun.	3	10. 14. 18. 57	21. 7. 9, 0	16. 33. 11	14. 15, 1	5, 9
M.	4	10. 15. 19. 46	21. 11. 11, 5	16. 15. 23	14. 21, 0	5, 1
Tu.	5	10. 16. 20. 33	21. 15. 13, 1	15. 57. 19	14. 26, 1	4, 3
W.	6	10. 17. 21. 19	21. 19. 13, 9	15. 38. 58	14. 30, 4	3, 4
Th.	7	10. 18. 22. 3	21. 23. 13, 9	15. 20. 21	14. 33, 8	2, 6
F.	8	10. 19. 22. 46	21. 27. 13, 0	15. 1. 29	14. 36, 4	1, 8
Sa.	9	10. 20. 23. 26	21. 31. 11, 4	14. 42. 22	14. 38, 2	0, 9
Sun.	10	10. 21. 24. 5	21. 35. 8, 9	14. 23. 1	14. 39, 1	0, 2
M.	11	10. 22. 24. 42	21. 39. 5, 6	14. 3. 25	14. 39, 3	0, 7
Tu.	12	10. 23. 25. 18	21. 43. 1, 5	13. 43. 35	14. 38, 6	1, 4
W.	13	10. 24. 25. 52	21. 46. 56, 7	13. 23. 32	14. 37, 2	2, 1
Th.	14	10. 25. 26. 24	21. 50. 51, 1	13. 3. 16	14. 35, 1	2, 9
F.	15	10. 26. 26. 55	21. 54. 44, 7	12. 42. 47	14. 32, 2	3, 6
Sa.	16	10. 27. 27. 24	21. 58. 37, 7	12. 22. 7	14. 28, 6	4, 3
Sun.	17	10. 28. 27. 52	22. 2. 29, 9	12. 1. 14	14. 24, 3	5, 0
M.	18	10. 29. 28. 19	22. 6. 21, 4	11. 40. 9	14. 19, 3	5, 7
Tu.	19	11. 0. 28. 44	22. 10. 12, 3	11. 18. 54	14. 13, 6	6, 4
W.	20	11. 1. 29. 8	22. 14. 2, 5	10. 57. 28	14. 7, 2	7, 0
Th.	21	11. 2. 29. 30	22. 17. 52, 0	10. 35. 52	14. 0, 2	7, 6
F.	22	11. 3. 29. 51	22. 21. 40, 9	10. 14. 6	13. 52, 6	8, 2
Sa.	23	11. 4. 30. 10	22. 25. 29, 2	9. 52. 10	13. 44, 4	8, 8
Sun.	24	11. 5. 30. 28	22. 29. 16, 9	9. 30. 6	13. 35, 6	9, 4
M.	25	11. 6. 30. 45	22. 33. 4, 1	9. 7. 52	13. 26, 2	10, 0
Tu.	26	11. 7. 31. 0	22. 36. 50, 6	8. 45. 31	13. 16, 2	10, 6
W.	27	11. 8. 31. 13	22. 40. 36, 6	8. 23. 2	13. 5, 6	11, 1
Th.	28	11. 9. 31. 25	22. 44. 22, 0	8. 0. 25	12. 54, 5	

Days	Time of $\odot$ 's Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 0	16. 15, 2	2. 32, 1	9. 993805	9. 24. 54
7	1. 7, 4	16. 14, 2	2. 31, 8	9. 994233	9. 24. 35
13	1. 6, 7	16. 13, 1	2. 31, 4	9. 994726	9. 24. 16
19	1. 6, 1	16. 11, 8	2. 31, 1	9. 995301	9. 23. 57
25	1. 5, 5	16. 10, 4	2. 30, 6	9. 995937	9. 23. 38

ECLIPSES of the SATELLITES of JUPITER.  
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersions.</i>					
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	4. 20. 36	* 1	16. 39. 30 Im.	4	11. 53. 38 Im.
2	22. 48. 54	1	18. 54. 59 E.	4	13. 55. 18 E.
* 4	17. 17. 16	5	5. 56. 19 Im.	* 11	15. 50. 32 Im.
6	11. 45. 31	5	8. 11. 47 E.	* 11	17. 52. 47 E.
8	6. 13. 53	8	19. 13. 18 Im.	18	19. 47. 39 Im.
10	0. 42. 10	8	21. 28. 48 E.	18	21. 50. 26 E.
11	19. 10. 32	12	8. 30. 5 Im.	25	23. 44. 56 Im.
13	13. 38. 49	12	10. 45. 36 E.	26	1. 48. 15 E.
15	8. 7. 11	15	21. 46. 56 Im.		
17	2. 35. 28	16	0. 2. 28 E.		
18	21. 3. 50	19	11. 3. 40 Im.		
* 20	15. 32. 7	19	13. 19. 12 E.		
22	10. 0. 29	23	0. 20. 26 Im.		
24	4. 28. 47	23	2. 35. 59 E.		
25	22. 57. 9	26	13. 37. 9 Im.		
* 27	17. 25. 27	* 26	15. 52. 42 E.		

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passag.	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY. Gr. Elong. 14°							
1	5. 25. 44	5. 24 N	9. 21. 47	2. 45 N	18. 59 S	22. 30	
4	6. 7. 19	4. 23	9. 22. 10	2. 12	19. 28	22. 21	
7	6. 17. 59	3. 18	9. 23. 29	1. 37	19. 50	22. 16	
10	6. 27. 54	2. 11	9. 25. 31	1. 2	20. 2	22. 14	
13	7. 7. 14	1. 4 N	9. 28. 8	0. 30 N	20. 4	22. 14	
16	7. 16. 8	0. 1 S	10. 1. 12	0. 0	19. 55	22. 16	
19	7. 24. 43	1. 4	10. 4. 36	0. 28 S	19. 35	22. 19	
22	8. 3. 5	2. 4	10. 8. 18	0. 53	19. 3	22. 24	
25	8. 11. 21	3. 0	10. 12. 15	1. 14	18. 20	22. 29	
28	8. 19. 35	3. 53	10. 16. 25	1. 33	17. 25	22. 35	
♀ VENUS. Gr. Elong. 14°							
1	8. 2. 45	0. 43 N	9. 13. 33	0. 22 N	22. 25 S	22. 1	
7	8. 12. 17	0. 9 N	9. 20. 59	0. 5 N	21. 45	22. 9	
13	8. 21. 48	0. 24 S	9. 28. 25	0. 12 S	20. 42	22. 16	
19	9. 1. 18	0. 57	10. 5. 51	0. 28	19. 17	22. 24	
25	9. 10. 47	1. 29	10. 13. 17	0. 43	17. 33	22. 32	
♂ MARS. Gr. Elong. 14°							
1	4. 10. 33	1. 50 N	4. 8. 0	4. 32 N	22. 40 N	11. 45	
7	4. 13. 13	1. 51	4. 5. 42	4. 29	23. 13	11. 11	
13	4. 15. 52	1. 51	4. 3. 39	4. 24	23. 38	10. 39	
19	4. 18. 30	1. 51	4. 1. 58	4. 15	23. 53	10. 9	
25	4. 21. 8	1. 51	4. 0. 44	4. 4	23. 59	9. 41	
♃ JUPITER. Gr. Elong. 23° 17'							
1	7. 22. 50	0. 56 N	8. 2. 42	0. 54 N	19. 51 S	19. 1	
7	7. 23. 18	0. 56	8. 3. 31	0. 54	20. 0	18. 41	
13	7. 23. 46	0. 56	8. 4. 11	0. 55	20. 7	18. 20	
19	7. 24. 14	0. 55	8. 4. 48	0. 55	20. 13	17. 59	
25	7. 24. 42	0. 55	8. 5. 19	0. 56	20. 18	17. 38	
♄ SATURN. Gr. Elong. 14°							
1	6. 10. 51	2. 27 N	6. 16. 8	2. 35 N	3. 58 S	16. 2	
7	6. 11. 3	2. 27	6. 16. 2	2. 36	3. 54	15. 37	
13	6. 11. 15	2. 27	6. 15. 51	2. 38	3. 49	15. 13	
19	6. 11. 27	2. 27	6. 15. 38	2. 39	3. 43	14. 49	
25	6. 11. 39	2. 27	6. 15. 21	2. 41	3. 35	14. 25	
♅ GEORGIAN. Gr. Elong. 14°							
1	6. 18. 4	0. 38 N	6. 20. 55	0. 39 N	7. 35 S	16. 16	
11	6. 18. 11	0. 38	6. 20. 48	0. 39	7. 32	15. 36	
21	6. 18. 19	0. 38	6. 20. 37	0. 39	7. 27	14. 57	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
F.	1	11. 2. 19. 19		11. 8. 48. 54		3. 9. 4 N		3. 36. 27 N	
Sa.	2	11. 15. 21. 55		11. 21. 58. 15		4. 1. 13		4. 23. 0	
Sun.	3	11. 28. 37. 56		0. 5. 20. 50		4. 41. 24		4. 56. 6	
M.	4	0. 12. 6. 52		0. 18. 55. 57		5. 6. 45		5. 13. 13	
Tu.	5	0. 25. 48. 6		1. 2. 43. 6		5. 15. 15		5. 12. 42	
W.	6	1. 9. 40. 55		1. 16. 41. 21		5. 5. 39		4. 53. 58	
Th.	7	1. 23. 44. 20		2. 0. 49. 36		4. 37. 47		4. 17. 18	
F.	8	2. 7. 57. 1		2. 15. 6. 15		3. 52. 44		3. 24. 27	
Sa.	9	2. 22. 17. 3		2. 29. 28. 58		2. 52. 51		2. 18. 25	
Sun.	10	3. 6. 41. 38		3. 13. 54. 30		1. 41. 44		1. 3. 27 N	
M.	11	3. 21. 7. 6		3. 28. 18. 42		0. 24. 9 N		0. 15. 25 S	
Tu.	12	4. 5. 28. 48		4. 12. 36. 43		0. 54. 34 S		1. 32. 36	
W.	13	4. 19. 41. 48		4. 26. 43. 30		2. 8. 56		2. 42. 58	
Th.	14	5. 3. 41. 14		5. 10. 34. 35		3. 14. 11		3. 42. 10	
F.	15	5. 17. 23. 4		5. 24. 6. 26		4. 6. 40		4. 27. 25	
Sa.	16	6. 0. 44. 31		6. 7. 17. 13		4. 44. 14		4. 57. 4	
Sun.	17	6. 13. 44. 34		6. 20. 6. 44		5. 5. 55		5. 10. 50	
M.	18	6. 26. 23. 57		7. 2. 36. 33		5. 11. 55		5. 9. 19	
Tu.	19	7. 8. 44. 57		7. 14. 49. 35		5. 3. 11		4. 53. 40	
W.	20	7. 20. 51. 3		7. 26. 49. 51		4. 40. 59		4. 25. 19	
Th.	21	8. 2. 46. 38		8. 8. 42. 3		4. 6. 52		3. 45. 51	
F.	22	8. 14. 36. 42		8. 20. 31. 17		3. 22. 28		2. 56. 55	
Sa.	23	8. 26. 26. 25		9. 2. 22. 44		2. 29. 26		2. 0. 16	
Sun.	24	9. 8. 20. 50		9. 14. 21. 18		1. 29. 39		0. 57. 54 S	
M.	25	9. 20. 24. 40		9. 26. 31. 23		0. 25. 18 S		0. 7. 57 N	
Tu.	26	10. 2. 41. 55		10. 8. 56. 33		0. 41. 28 N		14. 45	
W.	27	10. 15. 15. 36		10. 21. 39. 15		1. 47. 26		2. 19. 8	
Th.	28	10. 28. 7. 32		11. 4. 40. 31		2. 49. 23		3. 17. 43	

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	3	1. 16	333. 10	339. 4	7. 43 S	4. 56 S
Sa.	2	4	2. 1	344. 58	350. 54	2. 4 S	0. 50 N
Sun.	3	5	2. 46	356. 52	2. 56	3. 45 N	6. 39
M.	4	6	3. 32	9. 6	15. 26	9. 30	12. 15
Tu.	5	7	4. 22	21. 56	28. 38	14. 52	17. 19
W.	6	8	5. 15	35. 34	42. 43	19. 33	21. 32
Th.	7	9	6. 12	50. 5	57. 42	23. 12	24. 32
F.	8	10	7. 12	65. 29	73. 24	25. 29	26. 1
Sa.	9	11	8. 15	81. 24	89. 26	26. 7	25. 46
Sun.	10	12	9. 17	97. 23	105. 14	24. 59	23. 47
M.	11	13	10. 16	112. 54	120. 22	22. 12	20. 16
Tu.	12	14	11. 12	127. 37	134. 38	18. 2	15. 34
W.	13	15	12. 3	141. 25	148. 1	12. 53	10. 4
Th.	14	16	12. 52	154. 25	160. 40	7. 9	4. 11 N
F.	15	17	13. 38	166. 48	172. 49	1. 12 N	1. 45 S
Sa.	16	18	14. 23	178. 47	184. 43	4. 38 S	7. 26
Sun.	17	19	15. 8	190. 38	196. 34	10. 8	12. 40
M.	18	20	15. 53	202. 32	208. 33	15. 2	17. 14
Tu.	19	21	16. 40	214. 39	220. 49	19. 13	20. 58
W.	20	22	17. 28	227. 4	233. 25	22. 30	23. 46
Th.	21	23	18. 18	239. 50	246. 19	24. 46	25. 30
F.	22	24	19. 8	252. 52	259. 27	25. 56	26. 4
Sa.	23	25	19. 59	266. 3	272. 38	25. 54	25. 27
Sun.	24	26	20. 49	279. 12	285. 42	24. 42	23. 39
M.	25	27	21. 38	292. 9	298. 31	22. 20	20. 45
Tu.	26	28	22. 25	304. 49	311. 2	18. 54	16. 50
W.	27	29	23. 11	317. 11	323. 16	14. 34	12. 6
Th.	28	1	23. 57	329. 19	335. 20	9. 29	6. 44

		THE MOON'S				Proportional Logarithm.	
Days of the Week.	Days of the Month.	Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
F.	1	15.25	15.29	56.35	56.51	5026	5005
Sa.	2	15.34	15.37	57.6	57.20	4986	4968
Sun.	3	15.41	15.45	57.34	57.48	4951	4933
M.	4	15.49	15.53	58.2	58.16	4916	4898
Tu.	5	15.56	16.0	58.29	58.43	4882	4865
W.	6	16.3	16.7	58.55	59.8	4850	4834
Th.	7	16.10	16.13	59.19	59.29	4821	4809
F.	8	16.15	16.17	59.38	59.46	4798	4788
Sa.	9	16.19	16.20	59.52	59.56	4781	4776
Sun.	10	16.20	16.20	59.58	59.57	4773	4775
M.	11	16.19	16.17	59.53	59.47	4779	4787
Tu.	12	16.14	16.12	59.38	59.26	4798	4812
W.	13	16.8	16.3	59.11	58.54	4831	4852
Th.	14	15.58	15.52	58.35	58.14	4875	4901
F.	15	15.46	15.40	57.52	57.30	4928	4956
Sa.	16	15.34	15.27	57.6	56.43	4986	5015
Sun.	17	15.21	15.16	56.21	56.0	5044	5071
M.	18	15.10	15.5	55.41	55.23	5095	5119
Tu.	19	15.1	14.57	55.7	54.53	5140	5158
W.	20	14.54	14.52	54.41	54.33	5174	5185
Th.	21	14.50	14.49	54.26	54.23	5194	5198
F.	22	14.49	14.49	54.22	54.23	5199	5198
Sa.	23	14.50	14.52	54.27	54.34	5193	5183
Sun.	24	14.55	14.58	54.43	54.54	5171	5157
M.	25	15.1	15.5	55.6	55.21	5141	5122
Tu.	26	15.9	15.14	55.37	55.54	5100	5079
W.	27	15.19	15.23	56.11	56.29	5056	5033
Th.	28	15.29	15.34	56.48	57.6	5009	4986



*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup>		VT.		IX <sup>h</sup>		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
$\alpha$ Arietis.	1	62.29.44	60.53.0	59.16.4	57.38.59	44.36.14	42.57.43	75.38.48	62.30.36	56.1.42	54.24.14	72.22.38	52.46.37	70.44.19	51.8.51		
	2	49.30.56	47.52.51	46.14.37	44.36.14			64.9.37	49.14.38	42.57.43		60.51.27		57.32.50			
Aldebaran.	2	- - -	- - -	- - -	- - -	- - -	- - -	50.54.26	35.55.47	75.38.48	74.0.48	47.34.45	45.54.52	44.14.57	30.58.4		
	3	69.5.51	67.27.14	65.48.29	64.9.37			37.35.27	63.30.53	62.30.36		61.46.28	60.1.54	58.17.12			
	4	55.53.22	54.13.48	52.34.9	50.54.26			51.17.6	49.31.47	49.14.38	60.51.27	47.46.22	46.0.52	44.15.16			
	5	42.35.1	40.55.4	39.15.13	37.35.27					35.55.47	34.16.19						
Pollux.	6	29.19.21															
	7	70.26.59	68.43.12	66.59.16	65.15.9					63.30.53	61.46.28						
	8	56.32.21	54.47.23	53.2.18	51.17.6					49.31.47	47.46.22						
Regulus.	8	42.29.36															
	9	79.10.35	77.23.40	75.36.35	73.49.23					72.2.2	70.14.33	68.26.59	66.39.17				
	10	64.51.30	63.3.38	61.15.40	59.27.39					57.39.33	55.51.22	54.3.9	52.14.54				
	11	50.26.37	48.38.19	46.50.1	45.1.44					43.13.28	41.25.13	39.37.1	37.48.54				
Spica $\nu$	11	36.0.50	34.12.51	32.25.2	30.37.20					28.49.48	27.2.27	25.15.19	23.28.24				
	12	21.41.44															
	12	75.37.44	73.50.16	72.2.59	70.15.52					68.28.56	66.42.12	64.55.41	63.9.23				
	13	61.23.19	59.37.29	57.51.55	56.6.36					54.21.33	52.36.46	50.52.18	49.8.7				
Spica $\nu$	14	47.24.15	45.40.42	43.57.29	42.14.36					40.32.3	38.49.51	37.8.2	35.26.34				
	15	33.45.29															

Stars Names.	Days	Neon.	IIP.	VT.	IX.	Midnight.	XV <sup>n</sup> .	XVIII <sup>n</sup> .	XXI <sup>n</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	15	79.23.25	77.42.12	76. 1.21	74.26.50	72.40.40	71. 0.51	69.21.24	67.42.17
	16	66. 3.32	64.25.10	62.47. 7	61. 9.27	59.32. 5	57.55. 6	56.18.26	54.42. 7
	17	53. 6. 8	51.30.30	49.55.11	48.20.11	46.45.31	45.11. 9	43.37. 7	42. 3.21
	18	40.29.55	38.56.45	37.23.51	35.51.14	34.18.53	32.46.48	31.14.57	29.43.21
e Aquilæ.	19	28.12. 0							
	19	84. 2.42	82.42.59	81.23.33	80. 4.21	78.45.26	77.26.47	76. 8.25	74.50.22
	20	73.32.35	72.15. 6	70.57.57	69.41. 7	68.24.37	67. 8.27	65.52.38	64.37.12
The Sun.	21	63.22. 6							
	18	122.55. 9	121.29.39	120. 4.25	118.39.28	117.14.46	115.50.20	114.26. 8	113. 2.10
	19	111.38.27	110.14.58	108.51.41	107.28.36	106. 5.43	104.43. 1	103.20.29	101.58. 7
	20	100.35.55	99.13.52	97.51.58	96.30.11	95. 8.32	93.47. 0	92.25.33	91. 4.11
	21	89.42.55	88.21.42	87. 0.32	85.39.25	84.18.21	82.57.20	81.36.19	80.15.19
	22	78.54.20	77.33.19	76.12.16	74.51.11	73.30. 4	72. 8.55	70.47.42	69.26.24
	23	68. 5. 3	66.43.36	65.22. 4	64. 0.25	62.38.40	61.16.48	59.54.48	58.32.40
	24	57.10.24	55.47.58	54.25.22	53. 2.37	51.39.41	50.16.35	48.53.18	47.29.50
	25	46. 6.11	44.42.19	43.18.15	41.53.58	40.29.30	39. 4.49		

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>b</sup> .		VI <sup>b</sup> .		IX <sup>a</sup> .		Midnight.		XV <sup>a</sup> .		XVIII <sup>b</sup> .		XXI <sup>b</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	2	-	-	-	-	-	-	-	-	38.22.29	39.54.16	41.26.15	42.58.24	41.26.15	42.58.24	41.26.15	42.58.24
	3	44.30.45	46.3.17	47.35.59	49.8.53	50.41.57	52.15.12	53.48.38	55.22.15	50.41.57	52.15.12	53.48.38	55.22.15	50.41.57	52.15.12	53.48.38	55.22.15
	4	56.56.3	58.30.2	60.4.11	61.38.31	63.13.2	64.47.44	67.57.42	70.4.11	63.13.2	64.47.44	67.57.42	70.4.11	63.13.2	64.47.44	67.57.42	70.4.11
	5	69.32.57	71.8.23	72.43.59	74.19.47	75.55.45	77.31.54	79.8.14	80.44.45	75.55.45	77.31.54	79.8.14	80.44.45	75.55.45	77.31.54	79.8.14	80.44.45
	6	82.21.26	83.58.17	85.35.19	87.12.32	88.49.55	90.27.30	92.5.14	93.43.9	88.49.55	90.27.30	92.5.14	93.43.9	88.49.55	90.27.30	92.5.14	93.43.9
	7	95.21.14	96.59.29	98.37.53	100.16.27	101.55.10	103.34.3	105.13.5	106.52.16	101.55.10	103.34.3	105.13.5	106.52.16	101.55.10	103.34.3	105.13.5	106.52.16
	8	108.31.36	110.11.4	111.50.40	113.30.25	115.10.17	116.50.16	118.30.22	120.10.35	115.10.17	116.50.16	118.30.22	120.10.35	115.10.17	116.50.16	118.30.22	120.10.35
	9	121.50.54	-	-	-	-	-	-	-	12.42.0	14.20.43	16.0.34	17.41.26	12.42.0	14.20.43	16.0.34	17.41.26
	6	-	-	-	-	-	-	-	-	26.17.35	28.2.18	29.47.22	31.32.46	26.17.35	28.2.18	29.47.22	31.32.46
α Arietis.	7	19.23.14	21.5.54	22.49.11	24.33.6	26.17.35	28.2.18	29.47.22	31.32.46	40.23.35	42.10.23	43.57.26	45.44.28	40.23.35	42.10.23	43.57.26	45.44.28
	8	33.18.29	35.4.25	36.50.35	38.36.59	40.23.35	42.10.23	43.57.26	45.44.28	54.42.6	-	-	-	54.42.6	-	-	-
	9	47.31.45	49.19.10	51.6.42	52.54.21	-	-	-	-	-	-	-	-	-	-	-	-
Aldebaran.	9	-	-	-	-	-	-	-	-	23.42.2	25.21.53	27.2.40	28.44.16	23.42.2	25.21.53	27.2.40	28.44.16
	10	30.26.38	32.9.41	33.53.16	35.37.20	37.21.53	39.6.39	40.51.41	42.36.56	37.21.53	39.6.39	40.51.41	42.36.56	37.21.53	39.6.39	40.51.41	42.36.56
	11	44.22.25	46.7.59	47.53.37	49.39.22	51.25.10	53.10.59	54.56.47	56.42.34	51.25.10	53.10.59	54.56.47	56.42.34	51.25.10	53.10.59	54.56.47	56.42.34
	12	58.28.20	60.14.1	61.59.36	63.45.5	65.30.27	67.15.42	69.0.44	70.45.36	65.30.27	67.15.42	69.0.44	70.45.36	65.30.27	67.15.42	69.0.44	70.45.36
	13	72.30.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pollux.	13	30.24.26	32.8.13	33.51.54	35.35.31	37.19.2	39.2.26	40.45.39	42.28.48	37.19.2	39.2.26	40.45.39	42.28.48	37.19.2	39.2.26	40.45.39	42.28.48
	14	44.11.34	45.54.13	47.36.36	49.18.45	51.0.38	52.42.15	54.23.33	56.4.33	51.0.38	52.42.15	54.23.33	56.4.33	51.0.38	52.42.15	54.23.33	56.4.33
	15	57.45.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	15	20.44.44	22.24.48	24. 4.38	25.44.14	27.23.37	29. 2.44	30.41.34	32.20. 7
	16	33.58.23	35.36.18	37.13.54	38.51.11	40.28.10	42. 4.49	43.41. 9	45.17.16
	17	46.52.52	48.28.14	50. 3.18	51.38. 3	53.12.30	54.46.39	56.20.30	57.54. 4
	18	59.27.20	61. 0.19	62.33. 2	64. 5.29	65.37.40	67. 9.36	68.41.18	70.12.45
	19	71.43.59	73.14.59	74.45.47	76.16.22	77.46.45			
Spica ♀	19	- - -	- - -	- - -	- - -	23.49.12	25.18.49	26.48.16	28.17.39
	20	29.46.55	31.16. 5	32.45.10	34.14.10	35.43. 4	37.11.53	38.40.38	40. 9.19
	21	41.37.57	43. 6.31	44.35. 4	46. 3.34	47.32. 3	49. 0.30	50.28.57	51.57.25
	22	53.25.52	54.54.21	56.22.52	57.51.26	59.20. 3	60.48.43	62.17.27	63.46.16
	23	65.15.10							
Antares.	23	19.27.50	20.56.56	22.26. 8	23.55.27	25.24.53	26.54.27	28.24.10	29.54. 1
	24	31.24. 1	32.54.11	34.24.31	35.55. 2	37.25.43	38.56.36	40.27.41	41.58.58
	25	43.30.27	45. 2. 9	46.34. 5	48. 6.14	49.38.37	51.11.15	52.44. 7	54.17.14
	26	55.50.36	57.24.13	58.58. 5	60.38.14	62. 6.37	63.41.17	65.16.13	66.51.25
	27	68.26.54	70. 2.39	71.38.41	73.15. 0	74.51.35			



Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			☾ First Quarter - - - - 7. 21. 36
			☉ Full Moon - - - - - 14. 21. 49
			☾ Last Quarter - - - - - 22. 20. 8
			● New Moon - - - - - 30. 10. 53
F. Sa.	1 2	David. Chad.	Other Phenomena.
			D. H. M.
Sun. M. Tu. W. Th. F. Sa.	3 4 5 6 7 8 9	1 <sup>st</sup> Sunday in Lent.  Perpetua.	4. 2. 56 ☾ ♄ ☿ 6. 11. 24 ☾ ♄ Pleiadum. 8. 6. 36 ☾ ♄ 125 ☿ 8. 10. 7 ☾ ♄ 132 ☿ 9. 7. 18 ☾ ♄ ♀ 9. 21. 58 ☾ ♄ ♀ 10. - - - ♂ Stationary.
Sun. M. Tu. W. Th. F. Sa.	10 11 12 13 14 15 16	2 <sup>d</sup> Sunday in Lent.  Gregory M.	12. 7. 4 ☾ ☿ ☿ 12. 11. 35 ☾ ☉ ☿ 12. 20. 26 ☾ ♀ ☿ 20. 3. 15 ☾ ♀ ☿ 20. 12. 57 ☉ enters ♄ 20. 13. 0 ☾ ☉ ☿ 20. 16. 6 I. of ♄ m <sup>o</sup> 1 <sup>st</sup> N. of ♄'s C. 20. 17. 31 E. of ♄ m <sup>o</sup> 1 <sup>st</sup> N. of ♄'s C.
Sun. M. Tu. W. Th. F. Sa.	17 18 19 20 21 22 23	3 <sup>d</sup> Sunday in Lent. Edward K. of West-Sax.  Benedict.	21. 16. 31 ☾ ☉ Ophiuchi. 22. 22. 50 ☾ ♄ ♄ 23. - - - ♄ Stationary. 27. 13. 42 ☾ ☉ ☿
Sun. M. Tu. W. Th. F. Sa.	24 25 26 27 28 29 30	4 <sup>th</sup> Su. in Lent. Midl. Su. Annun. of B. V. Mary.	
Sun.	31	5 <sup>th</sup> Sunday in Lent.	

D

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	11. 10. 31. 34	22. 48. 6, 9	7. 37. 41	12. 42, 9	12, 2
Sa.	2	11. 11. 31. 42	22. 51. 51, 3	7. 14. 52	12. 30, 7	12, 6
Sun.	3	11. 12. 31. 48	22. 55. 35, 2	6. 51. 55	12. 18, 1	13, 1
M.	4	11. 13. 31. 52	22. 59. 18, 6	6. 28. 54	12. 5, 0	13, 6
Tu.	5	11. 14. 31. 54	23. 3. 1, 5	6. 5. 46	11. 51, 4	14, 0
W.	6	11. 15. 31. 53	23. 6. 44, 1	5. 42. 34	11. 37, 4	14, 5
Th.	7	11. 16. 31. 50	23. 10. 26, 1	5. 19. 18	11. 22, 9	14, 9
F.	8	11. 17. 31. 45	23. 14. 7, 7	4. 55. 57	11. 8, 0	15, 3
Sa.	9	11. 18. 31. 38	23. 17. 48, 9	4. 32. 33	10. 52, 7	15, 7
Sun.	10	11. 19. 31. 28	23. 21. 29, 7	4. 9. 6	10. 37, 0	16, 0
M.	11	11. 20. 31. 17	23. 25. 10, 2	3. 45. 35	10. 21, 0	16, 4
Tu.	12	11. 21. 31. 2	23. 28. 50, 3	3. 22. 3	10. 4, 6	16, 6
W.	13	11. 22. 30. 46	23. 32. 30, 2	2. 58. 27	9. 48, 0	16, 9
Th.	14	11. 23. 30. 28	23. 36. 9, 7	2. 34. 50	9. 31, 1	17, 3
F.	15	11. 24. 30. 7	23. 39. 49, 0	2. 11. 11	9. 13, 8	17, 5
Sa.	16	11. 25. 29. 45	23. 43. 28, 1	1. 47. 31	8. 56, 3	17, 7
Sun.	17	11. 26. 29. 20	23. 47. 6, 9	1. 23. 51	8. 38, 6	17, 8
M.	18	11. 27. 28. 54	23. 50. 45, 5	1. 0. 9	8. 20, 8	18, 1
Tu.	19	11. 28. 28. 26	23. 54. 24, 0	0. 36. 28	8. 2, 7	18, 2
W.	20	11. 29. 27. 56	23. 58. 2, 3	0. 12. 46	7. 44, 5	18, 3
Th.	21	0. 0. 27. 24	0. 1. 40, 5	0. 10. 55	7. 26, 2	18, 4
F.	22	0. 1. 26. 50	0. 5. 18, 7	0. 34. 34	7. 7, 8	18, 4
Sa.	23	0. 2. 26. 15	0. 8. 56, 7	0. 58. 13	6. 49, 4	18, 5
Sun.	24	0. 3. 25. 38	0. 12. 34, 7	1. 21. 50	6. 30, 9	18, 6
M.	25	0. 4. 24. 59	0. 16. 12, 6	1. 45. 25	6. 12, 3	18, 6
Tu.	26	0. 5. 24. 18	0. 19. 50, 5	2. 8. 58	5. 53, 7	18, 6
W.	27	0. 6. 23. 36	0. 23. 28, 5	2. 32. 29	5. 35, 1	18, 5
Th.	28	0. 7. 22. 52	0. 27. 6, 4	2. 55. 56	5. 16, 6	18, 5
F.	29	0. 8. 22. 6	0. 30. 44, 4	3. 19. 20	4. 58, 1	18, 5
Sa.	30	0. 9. 21. 18	0. 34. 22, 4	3. 42. 40	4. 39, 6	18, 4
Sun.	31	0. 10. 20. 27	0. 38. 0, 5	4. 5. 56	4. 21, 2	

Days	Time of $\odot$ 's pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5. 2	16. 9. 5	2. 30. 3	9. 996371	9. 23. 25
7	1. 4. 8	16. 8. 0	2. 29. 9	9. 997040	9. 23. 6
13	1. 4. 5	16. 6. 4	2. 29. 4	9. 997736	9. 22. 47
19	1. 4. 3	16. 4. 8	2. 28. 9	9. 998470	9. 22. 28
25	1. 4. 2	16. 3. 1	2. 28. 4	9. 999233	9. 22. 9

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>					
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	11. 53. 50	2	2. 53. 49 Im.	5	3. 43. 7 Im.
3	6. 22. 7	2	5. 9. 25 E.	5	5. 46. 56 E.
5	0. 50. 32	<i>Immersion.</i>		12	7. 40. 33 Im.
6	19. 18. 48	* 5	16. 10. 27	12	9. 45. 4 E.
8	13. 47. 13	9	5. 27. 5	19	11. 38. 18 Im.
10	8. 15. 31	12	18. 43. 40	*19	13. 43. 27 E.
12	2. 43. 55	16	8. 0. 15	*26	15. 35. 25 Im.
13	21. 12. 13	19	21. 16. 48	26	17. 41. 15 E.
*15	15. 40. 37	23	10. 33. 21		
17	10. 8. 57	26	23. 49. 52		
19	4. 37. 23	*30	13. 6. 23		
20	23. 5. 42				
22	17. 34. 8				
24	12. 2. 28				
26	6. 30. 54				
28	0. 59. 15				
29	19. 27. 42				
*31	13. 56. 3				



		T H E M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	2	♂	341. 20	347. 22	3. 53 S	0. 58 S
Sa.	2	3	0. 43	353. 26	359. 35	2. 0 N	4. 58 N
Sun.	3	4	1. 31	5. 50	12. 13	7. 53	10. 44
M.	4	5	2. 21	18. 45	25. 28	13. 28	16. 2
Tu.	5	6	3. 14	32. 22	39. 29	18. 24	20. 31
W.	6	7	4. 10	46. 48	54. 18	22. 20	23. 49
Th.	7	8	5. 10	61. 57	69. 44	24. 56	25. 39
F.	8	9	6. 11	77. 35	85. 27	25. 57	25. 50
Sa.	9	10	7. 12	93. 10	100. 58	25. 18	24. 21
Sun.	10	11	8. 11	108. 31	115. 54	23. 1	21. 21
M.	11	12	9. 7	123. 4	130. 2	19. 22	17. 8
Tu.	12	13	9. 58	136. 48	143. 22	14. 40	12. 1
W.	13	14	10. 47	149. 47	156. 2	9. 15	6. 23
Th.	14	15	11. 34	162. 10	168. 13	3. 28 N	0. 33 N
F.	15	16	12. 19	174. 12	180. 9	2. 21 S	5. 12 S
Sa.	16	17	13. 5	186. 6	192. 3	7. 58	10. 37
Sun.	17	18	13. 51	198. 2	204. 5	13. 7	15. 27
M.	18	19	14. 38	210. 11	216. 22	17. 36	19. 32
Tu.	19	20	15. 26	222. 37	228. 58	21. 15	22. 42
W.	20	21	16. 16	235. 22	241. 51	23. 54	24. 49
Th.	21	22	17. 7	248. 23	254. 57	25. 27	25. 47
F.	22	23	17. 56	261. 31	268. 5	25. 50	25. 35
Sa.	23	24	18. 47	274. 37	281. 6	25. 2	24. 12
Sun.	24	25	19. 36	287. 31	293. 53	23. 6	21. 43
M.	25	26	20. 23	300. 10	306. 22	20. 6	18. 14
Tu.	26	27	21. 10	312. 31	318. 36	16. 9	13. 52
W.	27	28	21. 56	324. 38	330. 39	11. 24	8. 47
Th.	28	29	22. 42	336. 40	342. 42	6. 2	3. 10 S
F.	29	30	23. 30	348. 48	354. 58	0. 14 S	2. 45 N
Sa.	30	1	♂	1. 15	7. 40	5. 43 N	8. 40
Sun.	31	2	0. 20	14. 14	21. 1	11. 32	14. 15

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
F.	1	15. 38	15. 43	57. 24	57. 40	4964	4943
Sa.	2	15. 47	15. 51	57. 56	58. 11	4923	4905
Sun.	3	15. 55	15. 58	58. 25	58. 37	4887	4872
M.	4	16. 2	16. 4	58. 49	58. 58	4858	4846
Tu.	5	16. 6	16. 7	59. 4	59. 10	4839	4832
W.	6	16. 9	16. 10	59. 15	59. 19	4826	4821
Th.	7	16. 10	16. 11	59. 21	59. 22	4819	4817
F.	8	16. 11	16. 10	59. 22	59. 21	4817	4819
Sa.	9	16. 10	16. 9	59. 19	59. 16	4821	4824
Sun.	10	16. 8	16. 6	59. 11	59. 6	4831	4837
M.	11	16. 4	16. 2	58. 58	58. 50	4846	4856
Tu.	12	15. 59	15. 56	58. 40	58. 28	4869	4883
W.	13	15. 52	15. 49	58. 15	58. 1	4900	4917
Th.	14	15. 44	15. 40	57. 46	57. 29	4936	4957
F.	15	15. 35	15. 30	57. 12	56. 54	4979	5002
Sa.	16	15. 25	15. 21	56. 36	56. 19	5025	5046
Sun.	17	15. 16	15. 11	56. 1	55. 44	5069	5091
M.	18	15. 7	15. 3	55. 28	55. 13	5112	5132
Tu.	19	14. 59	14. 56	55. 0	54. 48	5149	5165
W.	20	14. 53	14. 51	54. 38	54. 31	5178	5187
Th.	21	14. 50	14. 49	54. 25	54. 23	5195	5198
F.	22	14. 49	14. 49	54. 22	54. 24	5199	5197
Sa.	23	14. 51	14. 53	54. 30	54. 37	5189	5179
Sun.	24	14. 56	14. 59	54. 47	55. 0	5166	5149
M.	25	15. 3	15. 8	55. 15	55. 31	5129	5108
Tu.	26	15. 13	15. 19	55. 50	56. 11	5084	5056
W.	27	15. 24	15. 30	56. 32	56. 54	5029	5002
Th.	28	15. 37	15. 43	57. 18	57. 41	4971	4942
F.	29	15. 49	15. 55	58. 4	58. 25	4913	4887
Sa.	30	16. 1	16. 6	58. 45	59. 4	4863	4839
Sun.	31	16. 10	16. 14	59. 20	59. 33	4820	4804

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Aldebaran.	2	-	-	-	-	-	-	-	-	66.	10. 21	64.	29. 15	62.	48. 2	61.	6. 41
	3	59.	25. 12	57.	43. 37	56.	1. 58	54.	20. 15	52.	38. 27	50.	56. 36	49.	14. 44	47.	32. 52
	4	45.	51. 0	44.	9. 9	42.	27. 23	40.	45. 43	39.	4. 10	37.	22. 43	35.	41. 32	34.	0. 38
	5	32.	20. 1	30.	39. 50	29.	0. 7	27.	20. 54	25.	42. 17						
Pollux.	5	-	-	-	-	-	-	-	-	66.	41. 24	64.	56. 35	63.	11. 43	61.	26. 50
	6	59.	41. 55	57.	57. 0	56.	12. 4	54.	27. 8	52.	42. 12	50.	57. 18	49.	12. 27	47.	27. 37
	7	45.	42. 49	43.	58. 6	42.	13. 27	40.	28. 53	38.	44. 24						
Regulus.	7	-	-	-	-	-	-	-	-	75.	21. 30	73.	35. 37	71.	49. 44	70.	3. 51
	8	68.	17. 59	66.	32. 7	64.	46. 16	63.	0. 27	61.	14. 38	59.	28. 50	57.	43. 5	55.	57. 22
	9	54.	11. 41	52.	26. 2	50.	40. 27	48.	54. 54	47.	9. 25	45.	23. 59	43.	38. 36	41.	53. 18
	10	40.	8. 5	38.	22. 56	36.	37. 54	34.	52. 59	33.	8. 10	31.	23. 26	29.	38. 53	27.	54. 30
	11	26.	10. 17	24.	26. 17	23.	42. 32	20.	59. 2	19.	15. 47						
Spica $\pi$	11	-	-	-	-	-	-	-	-	73.	9. 37	71.	25. 17	69.	41. 3	67.	56. 57
	12	66.	12. 59	64.	29. 10	62.	45. 29	61.	1. 58	59.	18. 36	57.	35. 24	55.	52. 22	54.	9. 31
	13	52.	26. 50	50.	44. 21	49.	2. 4	47.	20. 0	45.	38. 8	43.	56. 29	42.	15. 3	40.	33. 52
	14	38.	52. 55	37.	12. 12	35.	31. 46	33.	51. 35	32.	11. 41	30.	32. 3	28.	52. 44	27.	13. 43
	15	25.	35. 0														

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	15	71. 10. 24	69. 31. 16	67. 52. 23	66. 13. 46	64. 35. 25	62. 57. 19	61. 19. 29	59. 41. 55
	16	58. 4. 37	56. 27. 35	54. 50. 50	53. 14. 21	51. 38. 8	50. 2. 11	48. 26. 31	46. 51. 6
	17	45. 15. 58	43. 41. 5	42. 6. 29	40. 32. 7	38. 58. 2	37. 24. 12	35. 50. 37	34. 17. 17
	18	32. 44. 12							
α Aquilæ.	18	87. 56. 1	86. 34. 33	85. 13. 20	83. 52. 22	82. 31. 39	81. 11. 12	79. 51. 3	78. 31. 11
	19	77. 11. 36	75. 52. 19	74. 33. 21	73. 14. 43	71. 56. 25	70. 38. 27	69. 20. 51	68. 3. 37
	20	66. 46. 45	65. 30. 17	64. 14. 13	62. 58. 35	61. 43. 23			
	20	- - -	- - -	- - -	- - -	85. 23. 47	84. 2. 22	82. 41. 5	81. 19. 57
Fomalhaut.	21	79. 58. 56	78. 38. 3	77. 17. 19	75. 56. 43	74. 36. 16	73. 15. 57	71. 55. 47	70. 35. 46
	22	69. 15. 55	67. 56. 12	66. 36. 41	65. 17. 20	63. 58. 10	62. 39. 11	61. 20. 26	60. 1. 52
	23	58. 43. 32							
	20	120. 46. 3	110. 24. 2	118. 2. 9	116. 40. 23	115. 18. 45	113. 57. 12	112. 35. 45	111. 14. 22
The Sun.	21	109. 53. 5	108. 31. 51	107. 10. 41	105. 49. 33	104. 28. 28	103. 7. 25	101. 46. 22	100. 25. 20
	22	99. 4. 19	97. 43. 18	96. 22. 15	95. 1. 11	93. 40. 5	92. 18. 56	90. 57. 43	89. 36. 27
	23	88. 15. 6	86. 53. 40	85. 32. 7	84. 10. 29	82. 48. 44	81. 26. 51	80. 4. 51	78. 42. 42
	24	77. 20. 24	75. 57. 55	74. 35. 16	73. 12. 26	71. 49. 26	70. 26. 14	69. 2. 49	67. 39. 12
	25	66. 15. 22	64. 51. 18	63. 27. 0	62. 2. 27	60. 37. 39	59. 12. 35	57. 47. 15	56. 21. 39
	26	54. 55. 47	53. 29. 38	52. 3. 11	50. 36. 28	49. 9. 27	47. 42. 8	46. 14. 32	44. 46. 38
	27	43. 18. 27	41. 49. 57	40. 21. 10	38. 52. 4	37. 22. 41			

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
The Sun.	4	39. 8. 52	40. 45. 25	42. 22. 6	43. 58. 55	45. 35. 53	47. 12. 57	48. 50. 8	50. 27. 25								
	5	52. 4. 49	53. 42. 18	55. 19. 53	56. 57. 32	58. 35. 16	60. 13. 4	61. 50. 55	63. 28. 50								
	6	65. 6. 49	66. 44. 51	68. 22. 55	70. 1. 2	71. 39. 12	73. 17. 23	74. 55. 35	76. 33. 49								
	7	78. 12. 5	79. 50. 21	81. 28. 39	83. 6. 57	84. 45. 16	86. 23. 35	88. 1. 54	89. 40. 14								
	8	91. 18. 33	92. 56. 52	94. 35. 9	96. 13. 26	97. 51. 42	99. 29. 57	101. 8. 10	102. 46. 22								
	9	104. 24. 32	106. 2. 40	107. 40. 45	109. 18. 48	110. 56. 48	112. 34. 45	114. 12. 39	115. 50. 29								
α Arietis.	10	117. 28. 16	119. 5. 59	120. 43. 37	122. 21. 10	123. 58. 39	51. 9. 32	52. 54. 55	56. 25. 41								
	8	44. 8. 14	45. 53. 31	47. 38. 50	49. 24. 10	51. 9. 32	65. 12. 27	66. 57. 45	70. 28. 13								
	9	58. 11. 4	59. 56. 26	61. 41. 48	63. 27. 8	65. 12. 27	67. 5. 18	69. 50. 19	72. 31. 36								
Aldebaran.	10	72. 13. 24	74. 5. 18	76. 51. 18	78. 38. 57	80. 27. 40	82. 19. 12	84. 10. 46	86. 1. 42								
	10	40. 20. 20	42. 2. 44	43. 45. 15	45. 27. 53	47. 10. 38	48. 53. 27	50. 36. 18	52. 19. 12								
	11	54. 2. 8	55. 45. 2	57. 27. 55	59. 10. 46	60. 53. 36	62. 36. 22	64. 19. 5	66. 1. 42								
Pollux.	12	67. 44. 16	69. 26. 44	71. 9. 4	72. 51. 18	74. 33. 25	76. 15. 18	77. 58. 29	79. 50. 29								
	12	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -								
	13	39. 12. 51	40. 54. 2	42. 35. 8	44. 16. 8	45. 57. 3	47. 37. 49	49. 18. 25	50. 58. 53								
	14	52. 39. 11	54. 19. 18	55. 59. 14	57. 38. 57	59. 18. 29	60. 58. 29	62. 38. 29	64. 18. 29								

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	14	- - -	- - -	- - -	- - -	22. 17. 29	23. 56. 37	25. 35. 36	27. 14. 26
	15	28. 53. 6	30. 31. 35	32. 9. 53	33. 47. 58	35. 25. 52	37. 3. 31	38. 40. 57	40. 18. 8
	16	41. 55. 6	43. 31. 48	45. 8. 16	46. 44. 28	48. 20. 26	49. 56. 7	51. 31. 33	53. 6. 44
	17	54. 41. 39	56. 16. 19	57. 50. 44	59. 24. 55	60. 58. 50	62. 32. 30	64. 5. 55	65. 39. 6
	18	67. 12. 2	68. 44. 44	70. 17. 13	71. 49. 27	73. 21. 29	74. 53. 17	76. 24. 52	77. 56. 15
	19	79. 27. 25							
Spica ♀	19	25. 28. 14	26. 58. 44	28. 29. 5	29. 59. 19	31. 29. 24	32. 59. 21	34. 29. 11	35. 58. 54
	20	37. 28. 29	38. 57. 57	40. 27. 19	41. 56. 35	43. 25. 45	44. 54. 48	46. 23. 47	47. 52. 41
	21	49. 21. 31	50. 50. 17	52. 19. 1	53. 47. 41	55. 16. 19	56. 44. 55	58. 13. 31	59. 42. 7
	22	61. 10. 42	62. 39. 18	64. 7. 55	65. 36. 34	67. 5. 15			
	22	- - -	- - -	- - -	- - -	21. 19. 15	22. 48. 3	24. 16. 56	25. 45. 53
Antares.	23	27. 14. 54	28. 44. 1	30. 13. 14	31. 42. 34	33. 12. 1	34. 41. 35	36. 11. 18	37. 41. 11
	24	39. 11. 12	40. 41. 24	42. 11. 47	43. 42. 21	45. 13. 7	46. 44. 4	48. 15. 14	49. 46. 37
	25	51. 18. 13	52. 50. 4	54. 22. 11	55. 54. 33	57. 27. 11	59. 0. 5	60. 33. 16	62. 6. 44
	26	63. 40. 29	65. 14. 32	66. 48. 54	68. 23. 34	69. 58. 33	71. 33. 51	73. 9. 29	74. 45. 27
	27	76. 21. 44	77. 58. 22	79. 35. 20	81. 12. 40	82. 50. 20	84. 28. 22	86. 6. 45	87. 45. 29
	28	89. 24. 34	91. 4. 0	92. 43. 48	94. 23. 56	96. 4. 25	97. 45. 15	99. 26. 26	101. 7. 58
	29	102. 49. 51							

CONFIGURATIONS of the SATELLITES of JUPITER  
at Half an Hour past IV. o'Clock in the *Morning*.

1	I. O	.3	.4	O	.2	
2				1. 3 O .4	2.	
3		2.		O	.1	3 4
4		.1		O		3. .4
5				O	1. .2	.4
6	2 ●		.1	O	3.	.4
7		3. 2.		O	1.	4.
8		.3		.1 O	.2	4.
9	1 ●		.3	O	2. 4.	
10		2.		O .1	.3	
11		4. .2	1.	O		.3
12		4.		O	.1 .2	3.
13	3 ● 4.		.1	O	2.	
14	4.	3. 2.		O	1.	
15	.4	.3		.1 O		2. O
16	.4		.3	O	2.	1 ●
17	I. ( )	.4		O	.3	
18		.2 .3	1.	O		.3
19				O	1 4 .2	3.
20	3 ●		1.	O	2.	.4
21		3. 2.		O	1.	.4
22		.3		.1 .2 O		.4
23			.3	O	1. 2.	4.
24	I. O		2.	O	.3	4.
25		.2		1. O		.3 4.
26				O	.1 .3 4.	3.
27	3 ●		1. 4	O	2.	
28		3 4 2.		O	1.	
29		4. .3		.1 .2 O		
30	4.		.3	O	1. .2	
31	4.			.1 O	.3	2 ●

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ First Quarter	---- 6. 4. 31
			☉ Full Moon	---- 13. 11. 44
			☾ Last Quarter	---- 21. 15. 2
			● New Moon	---- 28. 20. 31
			Other Phenomena.	
			D. H. M.	
			2. 17. 55	☾ ♄ Pleiadum.
			4. 12. 17	☾ ♄ 125 8
			4. 15. 46	☾ ♄ 132 8
			5. 12. 48	☾ ☿ ♀
			6. 3. 27	☾ ♃ ♀
			8. 13. 22 $\frac{3}{4}$	I. of ☿ ♄ * 1' N. of ☾'s C.
			8. 14. 12 $\frac{1}{4}$	E. of ☿ ♄ * 5
			8. 17. 51	☾ ☉ ♄
			9. 2. 52	☾ ☿ ♄
			10. - -	♂ ♄ ☿, * 36' N.
			16. 20. 57	☾ ☿ ♄
			17. 0. 53	☾ ☿ ♄
			18. 0. 23	☾ ☿ Ophiuchi.
			19. 6. 43	☾ ☿ ♄
			20. 1. 37	☉ enters 8
			23. 23. 7	☾ ☿ ♄
			30. 6. 52	☾ ☿
M.	1			
Tu.	2			
W.	3	Rich <sup>d</sup> . Bp. of Chichester.		
Th.	4	St. Ambrose.		
F.	5	Camb. Term ends.		
Sa.	6	Oxford Term ends.		
Sun.	7	6th Sun. in Lent, Palm-		
M.	8	[Sunday.]		
Tu.	9			
W.	10			
Th.	11			
F.	12	Good-Friday.		
Sa.	13			
Sun.	14	Easter-Day.		
M.	15	Easter-Monday.		
Tu.	16	Easter-Tuesday.		
W.	17			
Th.	18			
F.	19	Alphege.		
Sa.	20			
Sun.	21	1st Su. aft. E. Low-Sun.		
M.	22			
Tu.	23	St. George.		
W.	24	Oxf. and Camb. T. beg.		
Th.	25	St. Mark. Prs. Mary b.		
F.	26			
Sa.	27			
Sun.	28	2d Sun. after Easter.		
M.	29	From East. in 15 d. 1 ret.		
Tu.	30			



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M.	1	0. 11. 19. 35	0. 41. 38, 7	4. 29. 7	4. 2, 9	18, 3
Tu.	2	0. 12. 18. 40	0. 45. 16, 9	4. 52. 13	3. 44, 6	18, 2
W.	3	0. 13. 17. 44	0. 48. 55, 3	5. 15. 15	3. 26, 4	18, 0
Th.	4	0. 14. 16. 45	0. 52. 33, 9	5. 38. 10	3. 8, 4	17, 8
F.	5	0. 15. 15. 43	0. 56. 12, 5	6. 1. 0	2. 50, 6	17, 7
Sa.	6	0. 16. 14. 40	0. 59. 51, 3	6. 23. 43	2. 32, 9	17, 5
Sun.	7	0. 17. 13. 34	1. 3. 30, 3	6. 46. 19	2. 15, 4	17, 3
M.	8	0. 18. 12. 25	1. 7. 9, 5	7. 8. 49	1. 58, 1	17, 1
Tu.	9	0. 19. 11. 15	1. 10. 48, 9	7. 31. 11	1. 41, 0	16, 9
W.	10	0. 20. 10. 2	1. 14. 28, 6	7. 53. 25	1. 24, 1	16, 6
Th.	11	0. 21. 8. 47	1. 18. 8, 5	8. 15. 32	1. 7, 5	16, 3
F.	12	0. 22. 7. 29	1. 21. 48, 6	8. 37. 30	0. 51, 2	16, 0
Sa.	13	0. 23. 6. 10	1. 25. 29, 1	8. 59. 19	0. 35, 2	15, 8
Sun.	14	0. 24. 4. 49	1. 29. 9, 9	9. 21. 0	0. 19, 4	15, 4
M.	15	0. 25. 3. 26	1. 32. 51, 0	9. 42. 31	0. 4, 0	15, 0
Tu.	16	0. 26. 2. 1	1. 36. 32, 5	10. 3. 53	Sub. 11, 0	14, 7
W.	17	0. 27. 0. 34	1. 40. 14, 3	10. 25. 5	0. 25, 7	14, 2
Th.	18	0. 27. 59. 5	1. 43. 56, 6	10. 46. 7	0. 39, 9	13, 8
F.	19	0. 28. 57. 35	1. 47. 39, 3	11. 6. 58	0. 53, 7	13, 5
Sa.	20	0. 29. 56. 3	1. 51. 22, 3	11. 27. 38	1. 7, 2	13, 0
Sun.	21	1. 0. 54. 30	1. 55. 5, 9	11. 48. 8	1. 20, 2	12, 5
M.	22	1. 1. 52. 55	1. 58. 49, 9	12. 8. 26	1. 32, 7	12, 1
Tu.	23	1. 2. 51. 18	2. 2. 34, 3	12. 28. 32	1. 44, 8	11, 6
W.	24	1. 3. 49. 40	2. 6. 19, 3	12. 48. 26	1. 56, 4	11, 1
Th.	25	1. 4. 48. 1	2. 10. 4, 7	13. 8. 7	2. 7, 5	10, 6
F.	26	1. 5. 46. 20	2. 13. 50, 6	13. 27. 36	2. 18, 1	10, 1
Sa.	27	1. 6. 44. 37	2. 17. 37, 1	13. 46. 51	2. 28, 2	9, 6
Sun.	28	1. 7. 42. 52	2. 21. 23, 9	14. 5. 53	2. 37, 8	9, 1
M.	29	1. 8. 41. 7	2. 25. 11, 4	14. 24. 41	2. 46, 9	8, 5
Tu.	30	1. 9. 39. 19	2. 28. 59, 5	14. 43. 15	2. 55, 4	

Days	Time of $\odot$ 's Semidiam. pass <sup>s</sup> Merid.	T H E S U N's			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 3	16. 1, 2	2. 27, 8	0.000115	9. 21. 47
7	1. 4. 4	15. 59, 5	2. 27, 3	0.000848	9. 21. 28
13	1. 4. 7	15. 57, 9	2. 26, 8	0.001573	9. 21. 8
19	1. 5. 0	15. 56, 3	2. 26, 3	0.002299	9. 20. 49
25	1. 5. 4	15. 54, 8	2. 25, 8	0.003008	9. 20. 30

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	8. 24. 32	3	2. 22. 54	2	19. 32. 32 Im.
4	2. 52. 53	* 6	15. 39. 28	2	21. 39. 3 E.
5	21. 21. 22	10	4. 56. 1	9	23. 30. 4 Im.
* 7	15. 49. 44	13	18. 12. 30	10	1. 37. 15 E.
9	10. 18. 14	17	7. 29. 5	17	3. 27. 44 Im.
11	4. 46. 36	20	20. 45. 39	17	5. 35. 35 E.
12	23. 15. 7	24	10. 2. 12	24	7. 26. 25 Im.
14	17. 43. 30	27	23. 18. 51	24	9. 34. 57 E.
* 16	12. 12. 2				
18	6. 40. 25				
20	1. 8. 58				
21	19. 37. 22				
* 23	14. 5. 55				
25	8. 34. 21				
27	3. 2. 56				
28	21. 31. 22				
30	15. 59. 57				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Gr. Elong. 27°.							
1	0. 14. 41	3. 39 S	0. 12. 10	0. 55 S	3. 59 N	0. 4	
4	1. 1. 14	1. 48 S	0. 18. 23	0. 26 S	6. 49	0. 16	
7	1. 18. 59	0. 22 N	0. 24. 37	0. 5 N	9. 38	0. 28	
10	2. 7. 37	2. 35	1. 0. 46	0. 39	12. 21	0. 39	
13	2. 26. 33	4. 34	1. 6. 40	1. 12	14. 53	0. 50	
16	3. 15. 7	6. 1	1. 12. 10	1. 42	17. 8	1. 0	
19	4. 2. 45	6. 49	1. 17. 9	2. 8	19. 1	1. 8	
22	4. 19. 5	6. 59	1. 21. 31	2. 28	20. 32	1. 15	
25	5. 3. 59	6. 40	1. 25. 11	2. 40	21. 40	1. 18	
28	5. 17. 30	5. 59	1. 28. 8	2. 43	22. 25	1. 19	
30	5. 25. 49	5. 23	1. 29. 40	2. 40	22. 43	1. 18	
♀ VENUS. Gr. Elong. 47°.							
1	11. 6. 8	3. 22 S	11. 26. 37	1. 29 S	2. 43 S	23. 9	
7	11. 15. 39	3. 24	0. 4. 2	1. 29	0. 14 N	23. 14	
13	11. 25. 11	3. 20	0. 11. 26	1. 26	3. 11	23. 20	
19	0. 4. 44	3. 12	0. 18. 50	1. 22	6. 7	23. 25	
25	0. 14. 18	2. 57	0. 26. 14	1. 15	8. 59	23. 30	
♂ MARS. Gr. Elong. 23°.							
1	5. 6. 26	1. 45 N	4. 2. 18	2. 52 N	22. 28 N	7. 39	
7	5. 9. 4	1. 44	4. 3. 49	2. 41	21. 55	7. 23	
13	5. 11. 41	1. 42	4. 5. 35	2. 30	21. 19	7. 8	
19	5. 14. 19	1. 40	4. 7. 34	2. 20	20. 39	6. 54	
25	5. 16. 57	1. 37	4. 9. 46	2. 11	19. 55	6. 41	
♃ JUPITER. Gr. Elong. 113°.							
1	7. 27. 26	0. 52 N	8. 0. 11	0. 59 N	20. 24 S	15. 34	
7	7. 27. 54	0. 51	8. 5. 57	0. 59	20. 21	15. 11	
13	7. 28. 22	0. 51	8. 5. 37	1. 0	20. 17	14. 48	
19	7. 28. 50	0. 50	8. 5. 11	1. 0	20. 12	14. 24	
25	7. 29. 18	0. 50	8. 4. 39	1. 0	20. 6	13. 59	
♄ SATURN. Gr. Elong. 174°.							
1	6. 12. 48	2. 28 N	6. 12. 58	2. 45 N	2. 35 S	12. 9	
7	6. 13. 0	2. 28	6. 12. 30	2. 45	2. 25	11. 45	
13	6. 13. 12	2. 28	6. 12. 3	2. 45	2. 14	11. 21	
19	6. 13. 24	2. 28	6. 11. 36	2. 44	2. 4	10. 58	
25	6. 13. 35	2. 28	6. 11. 11	2. 44	1. 55	10. 34	
♅ GEORGIAN. Gr. Elong. 174°.							
1	6. 18. 49	0. 37 N	6. 19. 14	0. 39 N	6. 56 S	12. 28	
11	6. 18. 57	0. 37	6. 18. 49	0. 39	6. 46	11. 50	
21	6. 19. 4	0. 37	6. 18. 23	0. 39	6. 37	11. 11	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
M.	1	1. 1. 56. 25	1. 9. 10. 52	4. 56. 34 N	4. 47. 41 N
Tu.	2	1. 16. 26. 20	1. 23. 42. 2	4. 34. 8	4. 16. 7
W.	3	2. 0. 57. 12	2. 8. 11. 8	3. 53. 59	3. 28. 7
Th.	4	2. 15. 23. 20	2. 22. 33. 21	2. 59. 2	2. 27. 12
F.	5	2. 29. 40. 53	3. 6. 45. 42	1. 53. 14	1. 17. 41
Sa.	6	3. 13. 47. 40	3. 20. 46. 46	0. 41. 11 N	0. 4. 18 N
Sun.	7	3. 27. 42. 59	4. 4. 36. 22	0. 32. 22 S	1. 8. 20 S
M.	8	4. 11. 26. 58	4. 18. 14. 49	1. 43. 2	2. 15. 59
Tu.	9	4. 25. 0. 1	5. 1. 42. 34	2. 46. 47	3. 15. 1
W.	10	5. 8. 22. 29	5. 14. 59. 42	3. 40. 22	4. 2. 32
Th.	11	5. 21. 34. 13	5. 28. 5. 58	4. 21. 16	4. 36. 26
F.	12	6. 4. 34. 50	6. 11. 0. 44	4. 47. 53	4. 55. 34
Sa.	13	6. 17. 23. 37	6. 23. 43. 23	4. 59. 28	4. 59. 37
Sun.	14	6. 29. 59. 59	7. 6. 13. 25	4. 56. 7	4. 49. 5
M.	15	7. 12. 23. 45	7. 18. 31. 2	4. 38. 43	4. 25. 11
Tu.	16	7. 24. 35. 28	8. 0. 37. 13	4. 8. 42	3. 49. 31
W.	17	8. 6. 36. 36	8. 12. 33. 58	3. 27. 53	3. 4. 4
Th.	18	8. 18. 29. 42	8. 24. 24. 18	2. 38. 19	2. 10. 53
F.	19	9. 0. 18. 16	9. 6. 12. 9	1. 42. 3	1. 12. 8
Sa.	20	9. 12. 6. 36	9. 18. 2. 14	0. 41. 20 S	0. 9. 58 S
Sun.	21	9. 23. 59. 43	9. 29. 59. 45	0. 21. 41 N	0. 53. 20 N
M.	22	10. 6. 2. 59	10. 12. 10. 8	1. 24. 39	1. 55. 20
Tu.	23	10. 18. 21. 49	10. 24. 38. 41	2. 25. 2	2. 53. 22
W.	24	11. 1. 1. 17	11. 7. 30. 6	3. 19. 57	3. 44. 24
Th.	25	11. 14. 5. 30	11. 20. 47. 46	4. 6. 15	4. 25. 6
F.	26	11. 27. 36. 59	0. 4. 33. 5	4. 40. 32	4. 52. 5
Sa.	27	0. 11. 35. 50	0. 18. 44. 47	4. 59. 25	5. 2. 12
Sun.	28	0. 25. 59. 18	1. 3. 18. 34	5. 0. 13	4. 53. 18
M.	29	1. 10. 41. 36	1. 18. 7. 22	4. 41. 26	4. 24. 45
Tu.	30	1. 25. 34. 46	2. 3. 2. 37	4. 3. 27	3. 37. 58

T H E M O O N ' s							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
M.	1	3	1. 13	27. 59	35. 10	16. 48 N	19. 6 N
Tu.	2	4	2. 10	42. 34	50. 10	21. 9	22. 51
W.	3	5	3. 11	57. 56	65. 49	24. 11	25. 7
Th.	4	6	4. 13	73. 46	81. 44	25. 38	25. 42
F.	5	7	5. 15	89. 39	97. 26	25. 21	24. 35
Sa.	6	8	6. 15	105. 3	112. 29	23. 26	21. 56
Sun.	7	9	7. 11	119. 41	126. 40	20. 7	18. 2
M.	8	10	8. 3	133. 25	139. 58	15. 43	13. 13
Tu.	9	11	8. 51	146. 20	152. 33	10. 35	7. 50
W.	10	12	9. 38	158. 38	164. 37	5. 2 N	2. 11 N
Th.	11	13	10. 23	170. 33	176. 25	0. 39 S	3. 28 S
F.	12	14	11. 8	182. 17	188. 10	6. 13	8. 53
Sa.	13	15	11. 53	194. 5	200. 3	11. 26	13. 51
Sun.	14	16	12. 39	206. 6	212. 13	16. 6	18. 9
M.	15	17	13. 27	218. 26	224. 44	20. 0	21. 36
Tu.	16	18	14. 17	231. 8	237. 35	22. 57	24. 2
W.	17	19	15. 7	244. 6	250. 40	24. 51	25. 22
Th.	18	20	15. 57	257. 14	263. 48	25. 36	25. 32
F.	19	21	16. 47	270. 20	276. 49	25. 10	24. 31
Sa.	20	22	17. 36	283. 14	289. 34	23. 36	22. 25
Sun.	21	23	18. 23	295. 49	301. 59	20. 59	19. 18
M.	22	24	19. 9	308. 4	314. 5	17. 24	15. 19
Tu.	23	25	19. 54	320. 2	325. 58	13. 2	10. 36
W.	24	26	20. 39	331. 52	337. 48	8. 0	5. 17 S
Th.	25	27	21. 25	343. 46	349. 48	2. 29 S	0. 25 N
F.	26	28	22. 14	355. 57	2. 14	3. 21 N.	6. 17
Sa.	27	29	23. 5	8. 41	15. 20	9. 11	12. 0
Sun.	28	1	6	22. 13	29. 20	14. 42	17. 13
M.	29	2	0. 2	36. 42	44. 20	19. 30	21. 29
Tu.	30	3	1. 2	52. 11	60. 14	23. 7	24. 21

		THE MOON'S				Proportional Logarithm.	
Days of the Week.	Days of the Month.	Semidiameter.		Hor. Parallax.		Noon.	Midn.
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.		
M.	1	16. 17	16. 19	59. 44	59. 52	4790	4781
Tu.	2	16. 20	16. 21	59. 57	60. 0	4775	4771
W.	3	16. 21	16. 20	59. 59	59. 56	4772	4776
Th.	4	16. 19	16. 16	59. 51	59. 43	4782	4792
F.	5	16. 14	16. 11	59. 35	59. 25	4801	4813
Sa.	6	16. 8	16. 5	59. 14	59. 2	4827	4842
Sun.	7	16. 2	15. 58	58. 49	58. 36	4858	4874
M.	8	15. 54	15. 50	58. 22	58. 8	4891	4908
Tu.	9	15. 46	15. 43	57. 53	57. 39	4927	4945
W.	10	15. 38	15. 35	57. 24	57. 10	4964	4981
Th.	11	15. 31	15. 26	56. 55	56. 40	5000	5019
F.	12	15. 22	15. 18	56. 25	56. 10	5038	5058
Sa.	13	15. 14	15. 11	55. 56	55. 42	5076	5094
Sun.	14	15. 7	15. 3	55. 28	55. 15	5112	5129
M.	15	15. 0	14. 57	55. 3	54. 52	5145	5159
Tu.	16	14. 54	14. 52	54. 42	54. 34	5173	5183
W.	17	14. 50	14. 49	54. 27	54. 21	5193	5201
Th.	18	14. 48	14. 48	54. 18	54. 17	5205	5206
F.	19	14. 48	14. 49	54. 18	54. 21	5205	5201
Sa.	20	14. 50	14. 52	54. 27	54. 34	5193	5183
Sun.	21	14. 55	14. 59	54. 45	54. 58	5169	5152
M.	22	15. 3	15. 8	55. 14	55. 32	5130	5107
Tu.	23	15. 13	15. 19	55. 52	56. 14	5081	5053
W.	24	15. 26	15. 33	56. 38	57. 3	5022	4990
Th.	25	15. 40	15. 47	57. 30	57. 56	4956	4923
F.	26	15. 55	16. 2	58. 23	58. 49	4890	4858
Sa.	27	16. 9	16. 15	59. 15	59. 38	4826	4798
Sun.	28	16. 21	16. 25	59. 59	60. 16	4772	4752
M.	29	16. 29	16. 32	60. 30	60. 40	4735	4723
Tu.	30	16. 34	16. 34	60. 47	60. 49	4715	4712
1							

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	1	78. 8. 18	76. 20. 57	-	-	74. 33. 30	72. 45. 58	-	-	70. 58. 21	69. 10. 40	67. 22. 57	65. 35. 13	63. 47. 26	61. 59. 39	60. 11. 53	58. 24. 8
	2	63. 47. 26	61. 59. 39	-	-	60. 11. 53	58. 24. 8	-	-	56. 36. 25	54. 48. 45	53. 1. 10	51. 13. 40	49. 26. 15	47. 38. 57	45. 51. 49	44. 4. 49
	3	49. 26. 15	47. 38. 57	-	-	45. 51. 49	44. 4. 49	-	-	42. 17. 59	40. 30. 18	38. 42. 28	36. 54. 38	35. 6. 48	33. 18. 58	31. 31. 6	29. 43. 16
Regulus.	3	-	-	-	-	-	-	-	-	78. 56. 25	77. 8. 20	75. 20. 22	73. 32. 30	71. 44. 44	69. 57. 4	68. 9. 33	66. 22. 9
	4	71. 44. 44	69. 57. 4	-	-	68. 9. 33	66. 22. 9	-	-	64. 34. 53	62. 47. 45	61. 0. 47	59. 13. 58	57. 27. 18	55. 40. 47	53. 54. 27	52. 8. 17
	5	57. 27. 18	55. 40. 47	-	-	53. 54. 27	52. 8. 17	-	-	50. 22. 18	48. 36. 30	46. 50. 53	45. 5. 28	43. 20. 14	41. 35. 11	39. 50. 21	38. 5. 44
	6	43. 20. 14	41. 35. 11	-	-	39. 50. 21	38. 5. 44	-	-	36. 21. 20	34. 37. 8	32. 53. 11	31. 9. 29	29. 26. 1	27. 42. 49	25. 59. 55	24. 17. 18
	7	29. 26. 1	27. 42. 49	-	-	25. 59. 55	24. 17. 18	-	-	22. 34. 58	20. 50. 10	19. 5. 10	17. 10. 20	15. 25. 30	13. 40. 40	11. 55. 50	10. 11. 0
Spica $\pi$	7	-	-	-	-	-	-	-	-	76. 29. 57	74. 46. 50	73. 3. 54	71. 21. 11	69. 38. 38	67. 56. 17	66. 14. 7	64. 32. 9
	8	69. 38. 38	67. 56. 17	-	-	66. 14. 7	64. 32. 9	-	-	62. 50. 22	61. 8. 46	59. 27. 22	57. 46. 10	56. 5. 9	54. 24. 10	52. 43. 42	51. 3. 16
	9	56. 5. 9	54. 24. 10	-	-	52. 43. 42	51. 3. 16	-	-	49. 23. 2	47. 42. 59	46. 3. 9	44. 23. 31	42. 44. 5	41. 4. 51	39. 25. 51	37. 47. 4
	10	42. 44. 5	41. 4. 51	-	-	39. 25. 51	37. 47. 4	-	-	36. 8. 30	34. 30. 7	32. 51. 59	31. 14. 5	29. 36. 24	27. 58. 58	26. 21. 48	24. 44. 54
	11	29. 36. 24	27. 58. 58	-	-	26. 21. 48	24. 44. 54	-	-	23. 8. 16	21. 29. 57	20. 10. 20	18. 21. 10	16. 32. 20	14. 43. 30	12. 54. 40	11. 6. 50
Antares.	11	-	-	-	-	-	-	-	-	68. 42. 11	67. 4. 58	65. 27. 58	63. 51. 9	62. 14. 32	60. 38. 7	59. 1. 53	57. 25. 52
	12	62. 14. 32	60. 38. 7	-	-	59. 1. 53	57. 25. 52	-	-	55. 50. 2	54. 14. 24	52. 38. 58	51. 3. 44	49. 28. 41	47. 53. 50	46. 19. 11	44. 44. 44
	13	49. 28. 41	47. 53. 50	-	-	46. 19. 11	44. 44. 44	-	-	43. 10. 29	41. 36. 26	40. 2. 34	38. 28. 54	36. 55. 26	35. 22. 10	33. 49. 5	32. 16. 12
	14	36. 55. 26	35. 22. 10	-	-	33. 49. 5	32. 16. 12	-	-	30. 43. 31	28. 58. 58	27. 14. 24	25. 29. 57	23. 45. 10	21. 60. 22	19. 75. 34	17. 90. 46

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
<i>α</i> Aquilæ.	14	- - -	- - -	- - -	- - -	86. 6. 42	84. 45. 23	83. 24. 16	82. 3. 23
	15	80. 42. 44	79. 22. 19	78. 2. 11	76. 42. 19	75. 22. 44	74. 3. 25	72. 44. 25	71. 25. 45
	16	70. 7. 24	68. 49. 24	67. 31. 47	66. 14. 32	64. 57. 41			
Fomalhaut.	16	- - -	- - -	- - -	- - -	89. 5. 10	87. 43. 10	86. 21. 18	84. 59. 34
	17	83. 37. 58	82. 16. 31	80. 55. 13	79. 34. 4	78. 13. 5	76. 52. 16	75. 21. 37	74. 11. 9
	18	72. 50. 51	71. 30. 44	70. 10. 49	68. 51. 6	67. 31. 34	66. 12. 15	64. 53. 10	63. 34. 19
	19	62. 15. 43	60. 57. 22	59. 39. 18	58. 21. 30	57. 4. 0			
<i>α</i> Pegasi.	19	- - -	- - -	- - -	- - -	75. 52. 59	74. 27. 23	73. 1. 46	71. 36. 8
	20	70. 10. 30	68. 44. 51	67. 19. 10	65. 53. 29	64. 27. 47	63. 2. 3	61. 36. 19	60. 10. 34
	21	58. 44. 47	57. 18. 59	55. 53. 9	54. 27. 18	53. 1. 26			
The Sun.	18	- - -	- - -	- - -	- - -	124. 2. 21	122. 41. 23	121. 20. 25	119. 59. 27
	19	118. 38. 29	117. 17. 29	115. 56. 28	114. 35. 25	113. 14. 20	111. 53. 11	110. 31. 59	109. 10. 43
	20	107. 49. 22	106. 27. 56	105. 6. 24	103. 44. 46	102. 23. 57	101. 1. 11	99. 39. 11	98. 17. 3
	21	96. 54. 46	95. 32. 19	94. 9. 43	92. 46. 55	91. 23. 2	90. 0. 47	88. 37. 25	87. 13. 49
	22	85. 50. 1	84. 25. 58	83. 1. 39	81. 37. 6	80. 12. 18	78. 47. 14	77. 21. 53	75. 56. 15
	23	74. 30. 20	73. 4. 6	71. 37. 33	70. 10. 41	68. 43. 30	67. 15. 59	65. 48. 7	64. 19. 55
	24	62. 51. 22	61. 22. 27	59. 53. 11	58. 23. 33	56. 53. 32	55. 23. 9	53. 52. 23	52. 21. 14
	25	50. 49. 43	49. 17. 48	47. 45. 30	46. 12. 50	44. 39. 48	43. 6. 22	41. 32. 34	39. 58. 24
	26	38. 23. 52							
Pollux.	30	54. 45. 32	52. 54. 52	51. 4. 15	49. 13. 42	47. 23. 11	45. 32. 47	43. 42. 31	41. 52. 25
	M. 1	40. 2. 27							



*DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		II <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
The Sun.	2	34.23.44		36. 3.53		37.44. 6		39.24.25		41. 4.49		42.45.16		44.25.44		46. 6.13	
	3	47.46.43		49.27.11		51. 7.38		52.48. 2		54.28.24		56. 8.42		57.48.55		59.29. 4	
	4	61. 9. 9		62.49. 8		64.28.59		66. 8.45		67.48.24		69.27.55		71. 7.18		72.46.33	
	5	74.25.41		76. 4.40		77.43.28		79.22. 8		81. 0.39		82.39. 0		84.17.10		85.55.10	
	6	87.33. 1		89.10.41		90.48.11		92.25.30		94. 2.39		95.39.36		97.16.23		98.52.58	
	7	100.29.23		102. 5.36		103.41.39		105.17.30		106.53.10		108.28.38		110. 3.54		111.38.59	
	8	113.13.53		114.48.34		116.23. 4		117.57.22		119.31.28							
	6	37.11.22		38.53.23		40.35.26		42.17.31		43.59.38		45.41.45		47.23.50		49. 5.53	
Aldebaran.	7	50.47.53		52.29.47		54.11.36		55.53.19		57.34.57		59.16.27		60.57.50		62.39. 5	
	8	64.20.13		66. 1.12		67.42. 2		69.22.44		71. 3.16							
	8	- - -		- - -		- - -		- - -		29. 3.52		30.43. 2		32.22.10		34. 1.17	
Pollux.	9	35.40.23		37.19.31		38.58.36		40.37.38		42.16.37		43.55.29		45.34.14		47.12.53	
	10	48.51.25		50.29.48		52. 8. 3		53.46.10		55.24. 8		57. 1.57		58.39.37		60.17. 7	
	11	61.54.28		- - -		- - -		- - -									
Regulus.	11	24.53. 9		26.30.15		28. 7.15		29.44. 7		31.20.52		32.57.29		34.33.57		36.10.16	
	12	37.46.27		39.22.27		40.58.17		42.33.57		44. 9.27		45.44.47		47.19.55		48.54.54	
	13	50.29.40		52. 4.16		53.38.41		55.12.54		56.46.57		58.20.48		59.54.28		61.27.57	
	14	63. 1.15		64.34.21		66. 7.17		67.40. 2		69.12.36		70.44.59		72.17.12		73.49.14	
	15	75.21. 5		- - -		- - -		- - -									

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica $\eta$	15	21. 22. 52	22. 53. 52	24. 24. 46	25. 55. 35	27. 26. 19	28. 56. 57	30. 27. 28	31. 57. 53
	16	33. 28. 11	34. 58. 21	36. 28. 25	37. 58. 21	39. 28. 11	40. 57. 54	42. 27. 30	43. 57. 11
	17	45. 26. 25	46. 55. 43	48. 24. 50	49. 54. 4	51. 23. 7	52. 52. 5	54. 20. 59	55. 49. 49
	18	57. 18. 36	58. 47. 20	60. 16. 1	61. 44. 40	63. 13. 18	64. 41. 54	66. 10. 30	67. 39. 5
	19	69. 7. 39							
Antares.	19	23. 23. 12	24. 51. 50	26. 20. 29	27. 49. 10	29. 17. 54	30. 46. 41	32. 15. 31	33. 44. 25
	20	35. 13. 24	36. 42. 28	38. 11. 37	39. 40. 52	41. 10. 14	42. 39. 42	44. 9. 19	45. 39. 4
	21	47. 8. 58	48. 39. 2	50. 9. 16	51. 39. 40	53. 10. 16	54. 41. 2	56. 12. 2	57. 43. 14
	22	59. 14. 40	60. 46. 20	62. 18. 15	63. 50. 26	65. 22. 52	66. 55. 34	68. 28. 33	70. 1. 49
	23	71. 35. 23	73. 9. 15	74. 43. 27	76. 17. 59	77. 52. 50	79. 28. 1	81. 3. 34	82. 39. 28
	24	84. 15. 43	85. 52. 21	87. 29. 21	89. 6. 44	90. 44. 30	92. 22. 39	94. 1. 11	95. 40. 8
	25	97. 19. 28							
$\alpha$ Aquila.	25	49. 30. 31	50. 48. 56	52. 8. 30	53. 29. 13	54. 51. 4	56. 13. 58	57. 37. 50	59. 2. 39
	26	60. 28. 27	61. 55. 5	63. 22. 31	64. 50. 46	66. 19. 47	67. 49. 31	69. 19. 55	70. 50. 58
	27	72. 22. 39	73. 54. 58	75. 27. 46	77. 1. 7	78. 34. 59			

CONFIGURATIONS of the SATELLITES of JUPITER  
at IV. o'Clock in the *Morning*.

1	.4	.2	○	.3	I ●
2	.4		○ .1.2	3.	
3		.4	○	3. 2.	
4		2 0 3	○ .4	.1	
5		3.	1 0 2	○	.4
6		.3	○	1. .2	.4
7	2 ● 3 ○		.1 ○		.4
8	I ●	.2	○	.3	.4
9	I. ○		○ .2	3.	4.
10			1. ○	3. 2.	4.
11		2 0 3	○	.1	4.
12		3.	.2 1.	○	4.
13		.3	4.	○	1. .2
14		4.	.1 .3	○	2.
15	4.	.2.	○	1.	.3
16	4.		○		3. 2 0. I. ○
17	..		1. ○	2 0 3	
18	.4	2 0 3	○	.1	
19	.4	3.	.2 1.	○	
20		3	4	○	.1 .4
21		.1 .3	○ .4	2.	
22		2.	○	1.	3 0 4
23	2. ○		.1 ○		3 0 4
24	I ●		○	2 0 3	..
25		2 0 3	○ .1		.4
26		.2 3.	1.	○	4.
27		3	○	1 0 2	4.
28		1 0 3	○	2. 4.	
29		2.	○	4. 1. .3	
30		4.	1 0 2 ○		.3

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			☾ First Quarter - - - 5. 11. 46
			☾ Full Moon - - - - 13. 2. 25
			☾ Last Quarter - - - 21. 6. 37
			● New Moon - - - - 28. 4. 17
			Other Phenomena:
			D. H. M.
			1. 19. 48 ☾ 125 8
			1. 23. 9 ☾ 132 8
			2. 19. 35 ☾ = II
			3. 9. 51 ☾ 2 II
			5. 18. 46 ☾ 2 Ω
			5. 23. 21 ☾ 0 Ω
			6. 7. 48 <sup>II</sup> ☾ of π Ω, * 9 <sup>1</sup> / <sub>2</sub> S. of D's C
			6. 8. 54 <sup>1</sup> / <sub>2</sub> E. ☾ 2 <sup>1</sup> / <sub>2</sub> S. of D's C
			8. 5. 55 ☾ e Ω
			8. - - 8 Stationary
			14. 3. 55 ☾ σ m
			14. 7. 52 ☾ α m
			15. 7. 21 ☾ θ Ophiuchi.
			16. 12. 40 I. ☾ of λ * 2 <sup>1</sup> / <sub>2</sub> N. of D's C.
			16. 14. 3 E. ☾ 0 <sup>1</sup> / <sub>2</sub>
			21. 2. 9 ☾ enters II
			21. 7. 19 ☾ θ ∞
			25. 7. 12 ☾ = X
			30. - - 24 β m, * 4' N.
			30. 18. 23 ☾ 2 II
W.	1	St. Philip and St. James	
Th.	2	[East. T. beg.	
F.	3	Invention of the Cross.	
Sa.	4		
Sun.	5	3d Sun. after Easter.	
M.	6	J. Ev. ante P. L. In 3 w.	
Tu.	7	Duch. of York b. [aft. E. 2r	
W.	8		
Th.	9		
F.	10		
Sa.	11		
Sun.	12	4th Sunday after Easter.	
M.	13	Fr. East. in m. 3 ret.	
Tu.	14		
W.	15		
Th.	16		
F.	17	Prs. of Wales born.	
Sa.	18		
		[born. Dunstan.	
Sun.	19	5th Su. aft. East. 2. Char.	
M.	20	Fr. East. in 5 weeks 4 ret.	
Tu.	21		
W.	22	Princess Elizabeth born.	
Th.	23	Ascen. Day. Holy Thurs.	
F.	24	On mor. of Ascen. 5 ret.	
Sa.	25		
		[Abp. Cant.	
Sun.	26	Su. aft. Asc. Day. Aug. 1st.	
M.	27	Vene. Bede. East. T. ends	
Tu.	28		
W.	29	K. Charles II. restored.	
Th.	30	Camb. T. div. n. Oxf.	
F.	31	[Term ends.	

Days of the Week.	Days of the Month.	THE S U N's			Equation of Time. Sub.	Diff.
		Longitude.	Rt. Ascen. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	1. 10. 37. 29	2. 32. 47, 9	15. 1. 33	3. 3, 4	
Th.	2	1. 11. 35. 37	2. 36. 36, 9	15. 19. 38	3. 10, 9	7, 5
F.	3	1. 12. 33. 44	2. 40. 26, 5	15. 37. 27	3. 17, 9	7, 0
Sa.	4	1. 13. 31. 49	2. 44. 16, 6	15. 55. 1	3. 24, 3	6, 4
Sun.	5	1. 14. 29. 51	2. 48. 7, 3	16. 12. 18	3. 30, 2	5, 9
M.	6	1. 15. 27. 52	2. 51. 58, 5	16. 29. 20	3. 35, 6	5, 4
Tu.	7	1. 16. 25. 51	2. 55. 50, 2	16. 46. 5	3. 40, 4	4, 8
W.	8	1. 17. 23. 48	2. 59. 42, 5	17. 2. 34	3. 44, 7	4, 3
Th.	9	1. 18. 21. 43	3. 3. 35, 3	17. 18. 45	3. 48, 4	3, 7
F.	10	1. 19. 19. 37	3. 7. 28, 7	17. 34. 39	3. 51, 5	3, 1
Sa.	11	1. 20. 17. 28	3. 11. 22, 6	17. 50. 15	3. 54, 1	2, 6
Sun.	12	1. 21. 15. 19	3. 15. 17, 1	18. 5. 34	3. 56, 2	2, 1
M.	13	1. 22. 13. 7	3. 19. 12, 2	18. 20. 34	3. 57, 7	1, 5
Tu.	14	1. 23. 10. 54	3. 23. 7, 9	18. 35. 16	3. 58, 5	0, 8
W.	15	1. 24. 8. 40	3. 27. 4, 1	18. 49. 40	3. 58, 8	0, 3
Th.	16	1. 25. 6. 25	3. 31. 1, 0	19. 3. 44	3. 58, 5	0, 3
F.	17	1. 26. 4. 8	3. 34. 58, 4	19. 17. 29	3. 57, 6	0, 9
Sa.	18	1. 27. 1. 50	3. 38. 56, 4	19. 30. 55	3. 56, 2	1, 4
Sun.	19	1. 27. 59. 31	3. 42. 55, 0	19. 44. 1	3. 54, 2	2, 0
M.	20	1. 28. 57. 11	3. 46. 54, 1	19. 56. 47	3. 51, 6	2, 6
Tu.	21	1. 29. 54. 51	3. 50. 53, 9	20. 9. 12	3. 48, 5	3, 1
W.	22	2. 0. 52. 29	3. 54. 54, 2	20. 21. 17	3. 44, 8	3, 7
Th.	23	2. 1. 50. 6	3. 58. 55, 0	20. 33. 2	3. 40, 5	4, 3
F.	24	2. 2. 47. 43	4. 2. 56, 4	20. 44. 25	3. 35, 6	4, 9
Sa.	25	2. 3. 45. 19	4. 6. 58, 3	20. 55. 27	3. 30, 3	5, 3
Sun.	26	2. 4. 42. 53	4. 11. 0, 7	21. 6. 8	3. 24, 4	5, 9
M.	27	2. 5. 40. 26	4. 15. 3, 7	21. 16. 26	3. 18, 1	6, 3
Tu.	28	2. 6. 37. 59	4. 19. 7, 1	21. 26. 23	3. 11, 2	6, 9
W.	29	2. 7. 35. 31	4. 23. 11, 0	21. 35. 58	3. 3, 9	7, 3
Th.	30	2. 8. 33. 1	4. 27. 15, 3	21. 45. 10	2. 56, 1	7, 8
F.	31	2. 9. 30. 31	4. 31. 20, 1	21. 53. 59	2. 47, 9	8, 2

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	T H E ' S U N ' s			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5. 8	15. 53. 3	2. 25. 4	0. 003667	9. 20. 11
7	1. 6. 3	15. 52. 0	2. 25. 0	0. 004270	9. 19. 52
13	1. 6. 8	15. 50. 7	2. 24. 6	0. 004828	9. 19. 33
19	1. 7. 3	15. 49. 6	2. 24. 2	0. 005359	9. 19. 14
25	1. 7. 7	15. 48. 6	2. 23. 9	0. 005840	9. 18. 55

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	10. 28. 24	* 1	12. 35. 25	* 1	11. 24. 25 Im.
4	4. 57. 0	5	1. 52. 5	* 1	13. 33. 44 E.
5	23. 25. 28	* 8	15. 8. 46	* 8	15. 22. 43 Im.
7	17. 54. 5	12	4. 25. 28	8	17. 32. 52 E.
* 9	12. 22. 33	15	17. 42. 14	15	19. 20. 32 Im.
11	6. 51. 12	19	6. 58. 58	15	21. 31. 27 E.
13	1. 19. 41	<i>Emerfions.</i>		22	23. 18. 26 Im.
14	19. 48. 20	22	22. 32. 51	23	1. 30. 5 E.
* 16	14. 16. 51	* 26	11. 49. 51	30	3. 16. 48 Im.
18	8. 45. 30	30	1. 6. 50	30	5. 29. 11 E.
20	3. 14. 2				
21	21. 42. 43				
	<i>Emerfions.</i>				
23	18. 19. 46				
* 25	12. 48. 28				
27	7. 17. 2				
29	1. 45. 45				
30	20. 14. 19				

## THE PLANETS

Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY. Inf. ♂ 19 <sup>d</sup> . 5 <sup>h</sup> . 1 <sup>m</sup> .							
1	5. 29. 47	5. 4 N	2. 0. 19	2. 37 N	22. 48 N	1. 18	
4	6. 11. 2	4. 2	2. 1. 43	2. 21	22. 49	1. 12	
7	6. 21. 25	2. 56	2. 2. 19	1. 54	22. 30	1. 3	
10	7. 1. 8	1. 48	2. 2. 10	1. 17	21. 53	0. 52	
13	7. 10. 18	0. 43 N	2. 1. 21	0. 33 N	20. 59	0. 37	
16	7. 19. 5	0. 23 S	1. 29. 59	0. 18 S	19. 52	0. 20	
19	7. 27. 35	1. 25	1. 28. 20	1. 11	18. 39	0. 2	
22	8. 5. 54	2. 23	1. 26. 38	2. 1	17. 28	23. 38	
25	8. 14. 9	3. 19	1. 25. 9	2. 45	16. 25	23. 22	
28	8. 22. 24	4. 10	1. 24. 6	3. 20	15. 35	23. 7	
31	9. 0. 46	4. 57	1. 23. 37	3. 44	15. 5	22. 54	
♀ VENUS. Sup. ♂ 27 <sup>d</sup> . 4 <sup>h</sup> .							
1	0. 23. 52	2. 38 S	1. 3. 38	1. 7 S	11. 41 N	23. 35	
7	1. 3. 27	2. 15	1. 11. 1	0. 57	14. 15	23. 41	
13	1. 13. 4	1. 47	1. 18. 24	0. 45	16. 36	23. 46	
19	1. 22. 41	1. 17	1. 25. 47	0. 32	18. 42	23. 52	
25	2. 2. 20	0. 44	2. 3. 10	0. 19	20. 30	23. 59	
♂ MARS. II 3 <sup>d</sup> . 18 <sup>h</sup> .							
1	5. 19. 36	1. 35 N	4. 12. 8	2. 2 N	19. 7 N	6. 27	
7	5. 22. 15	1. 32	4. 14. 40	1. 53	18. 15	6. 15	
13	5. 24. 54	1. 29	4. 17. 20	1. 45	17. 19	6. 2	
19	5. 27. 34	1. 26	4. 20. 7	1. 38	16. 20	5. 49	
25	6. 0. 15	1. 22	4. 23. 0	1. 30	15. 17	5. 36	
♃ JUPITER. 8 22 <sup>d</sup> . 14 <sup>h</sup> .							
1	7. 29. 45	0. 49 N	8. 4. 2	1. 0 N	20. 0 S	13. 34	
7	8. 0. 14	0. 49	8. 3. 22	1. 0	19. 52	13. 8	
13	8. 0. 42	0. 48	8. 2. 39	0. 59	19. 44	12. 42	
19	8. 1. 10	0. 48	8. 1. 54	0. 59	19. 36	12. 15	
25	8. 1. 37	0. 47	8. 1. 8	0. 58	19. 27	11. 48	
♄ SATURN.							
1	6. 13. 48	2. 28 N	6. 10. 49	2. 43 N	1. 47 S	10. 10	
7	6. 13. 59	2. 28	6. 10. 27	2. 43	1. 39	9. 45	
13	6. 14. 11	2. 29	6. 10. 9	2. 41	1. 33	9. 21	
19	6. 14. 23	2. 29	6. 9. 54	2. 40	1. 28	8. 56	
25	6. 14. 34	2. 29	6. 9. 42	2. 39	1. 25	8. 31	
♅ GEORGIAN.							
1	6. 19. 12	0. 37 N	6. 17. 59	0. 39 N	6. 28 S	10. 33	
11	6. 19. 20	0. 37	6. 17. 38	0. 39	6. 20	9. 53	
21	6. 19. 27	0. 37	6. 17. 20	0. 39	6. 13	9. 12	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	2. 10. 29. 49	2. 17. 55. 24	3. 8. 45 N	2. 36. 23 N
Th.	2	2. 25. 18. 28	3. 2. 38. 14	2. 1. 32	1. 24. 51
F.	3	3. 9. 54. 10	3. 17. 5. 50	0. 47. 4 N	0. 8. 52 N
Sa.	4	3. 24. 12. 59	4. 1. 15. 27	0. 29. 6 S	1. 6. 14 S
Sun.	5	4. 8. 13. 13	4. 15. 6. 19	1. 41. 58	2. 15. 48
M.	6	4. 21. 54. 55	4. 28. 39. 9	2. 47. 19	3. 16. 9
Tu.	7	5. 5. 19. 16	5. 11. 55. 26	3. 41. 58	4. 4. 33
W.	8	5. 18. 27. 54	5. 24. 56. 50	4. 23. 41	4. 39. 14
Th.	9	6. 1. 22. 28	6. 7. 44. 58	4. 51. 6	4. 59. 14
F.	10	6. 14. 4. 29	6. 20. 21. 10	5. 3. 36	5. 4. 17
Sa.	11	6. 26. 35. 9	7. 2. 46. 31	5. 1. 19	4. 54. 48
Sun.	12	7. 8. 55. 24	7. 15. 1. 52	4. 44. 54	4. 31. 47
M.	13	7. 21. 6. 3	7. 27. 8. 6	4. 15. 38	3. 56. 40
Tu.	14	8. 3. 8. 9	8. 9. 6. 25	3. 35. 10	3. 11. 21
W.	15	8. 15. 3. 7	8. 20. 58. 32	2. 45. 31	2. 17. 56
Th.	16	8. 26. 52. 58	9. 2. 46. 48	1. 48. 54	1. 18. 41
F.	17	9. 8. 40. 26	9. 14. 34. 18	0. 47. 37 S	0. 15. 57 S
Sa.	18	9. 20. 28. 55	9. 26. 24. 48	0. 15. 59 N	0. 47. 53 N
Sun.	19	10. 2. 22. 31	10. 8. 22. 39	1. 19. 27	1. 50. 22
M.	20	10. 14. 25. 50	10. 20. 32. 40	2. 20. 20	2. 48. 59
Tu.	21	10. 26. 43. 47	11. 2. 59. 48	3. 16. 9	3. 41. 2
W.	22	11. 9. 21. 17	11. 15. 48. 48	4. 3. 43	4. 23. 40
Th.	23	11. 22. 22. 47	11. 29. 3. 38	4. 40. 30	4. 53. 50
F.	24	0. 5. 51. 36	0. 12. 46. 48	5. 3. 18	5. 8. 34
Sa.	25	0. 19. 49. 8	0. 26. 58. 26	5. 9. 17	5. 5. 15
Sun.	26	1. 4. 14. 9	1. 11. 35. 42	4. 56. 17	4. 42. 20
M.	27	1. 19. 2. 12	1. 26. 32. 41	4. 23. 27	3. 59. 53
Tu.	28	2. 4. 5. 57	2. 11. 40. 47	3. 31. 58	3. 0. 11
W.	29	2. 19. 15. 56	2. 26. 50. 10	2. 25. 9	1. 47. 35
Th.	30	3. 4. 22. 17	3. 11. 51. 18	1. 8. 15 N	0. 27. 58 N
F.	31	3. 19. 16. 12	3. 26. 36. 30	0. 12. 28 S	0. 52. 18 S



*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.	III <sup>a</sup> .	VI <sup>b</sup> .	IX <sup>a</sup> .	Midnight.	XV <sup>a</sup> .	XVIII <sup>a</sup> .	XXI <sup>a</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	76. 37. 48	74. 46. 17	72. 54. 54	71. 3. 39	69. 12. 34	67. 21. 34	65. 30. 43	63. 40. 3
	2	64. 49. 33	59. 59. 15	58. 9. 10	56. 19. 18	54. 29. 40	52. 40. 16	50. 51. 7	49. 2. 15
	3	47. 13. 38	45. 25. 18	43. 37. 16	41. 49. 33	40. 2. 7	38. 15. 0	36. 28. 14	34. 41. 48
	4	32. 55. 43	31. 10. 0	29. 24. 41	27. 39. 45	25. 55. 13			
Spica $\pi$	4	- - -	- - -	- - -	- - -	79. 50. 48	78. 5. 42	76. 20. 54	74. 36. 26
	5	72. 52. 16	71. 8. 25	69. 24. 52	67. 41. 38	65. 58. 42	64. 16. 4	62. 33. 45	60. 51. 44
	6	59. 10. 2	57. 28. 37	55. 47. 30	54. 6. 48	52. 26. 10	50. 45. 56	49. 5. 59	47. 26. 19
	7	45. 46. 57	44. 7. 52	42. 29. 3	40. 50. 32	39. 12. 17	37. 34. 18	35. 56. 36	34. 19. 11
Antares.	8	32. 42. 2	31. 5. 9	29. 28. 34	27. 52. 17	26. 16. 17	24. 40. 35	23. 5. 12	21. 30. 8
	9	19. 55. 22							
	9	65. 25. 58	63. 50. 24	62. 15. 2	60. 39. 52	59. 4. 54	57. 30. 8	55. 55. 32	54. 21. 9
	10	52. 40. 56	51. 12. 54	49. 39. 3	48. 5. 22	46. 31. 52	44. 58. 31	43. 25. 21	41. 52. 20
$\alpha$ Aquilæ.	11	40. 19. 29	38. 46. 48	37. 14. 16	35. 41. 54	34. 9. 41	32. 37. 37	31. 5. 42	29. 33. 55
	12	28. 2. 17							
	12	83. 45. 3	82. 24. 32	81. 4. 12	79. 44. 5	78. 24. 10	77. 4. 28	75. 45. 2	74. 25. 50
	13	73. 6. 54	71. 48. 13	70. 29. 51	69. 11. 48	67. 54. 3	66. 36. 38	65. 19. 36	64. 2. 52
	14	62. 46. 40							

Stars Names.	Days	Noon.	III <sup>b</sup> .	VII <sup>b</sup> .	IX <sup>b</sup> .	Midnight.	XV <sup>b</sup> .	XVIII <sup>b</sup> .	XXI <sup>b</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	14	86.49.54	85.28.19	84. 6.52	82.45.31	81.24.18	80. 3.13	78.42.16	77.21.29
	15	76. 0.51	74.40.23	73.20. 6	72. 0. 0	70.40. 5	69.20.21	68. 0.51	66.41.34
	16	65.22.31	64. 3.42	62.45.10	61.26.53	60. 8.53			
α Pegasi.	16	- - -	- - -	- - -	- - -	79. 8. 6	77.42.28	76.16.51	74.51.15
	17	73.25.42	72. 0.10	70.34.39	69. 9.10	67.43.43	66.18.17	64.52.53	63.27.30
	18	62. 2. 9	60.36.49	59.11.32	57.46.16	56.21. 3	54.55.51	53.30.43	52. 5.39
α Arietis.	19	50.40.38	49.15.42	47.50.51	46.26. 7	45. 1.28			
	19	- - -	- - -	- - -	- - -	86.17.47	84.47.22	83.16.47	81.46. 9
	20	80.15. 1	78.43.50	77.12.25	75.40.48	74. 8.56	72.36.50	71. 4.28	69.31.51
The Sun.	21	67.58.58	66.25.48	64.52.21	63.18.37	61.44.35			
	18	- - -	- - -	- - -	- - -	121. 5.40	119.43.36	118.21.23	116.59. 3
	19	115.36.34	114.13.56	112.51. 8	111.28.11	110. 5. 3	108.41.44	107.18.14	105.54.32
	20	104.30.37	103. 6.29	101.42. 8	100.17.32	98.52.42	97.27.37	96. 2.16	94.36.39
	21	93.10.45	91.44.34	90.18. 4	88.51.17	87.24.11	85.56.45	84.29. 0	83. 0.55
	22	81.32.29	80. 3.41	78.34.32	77. 5. 0	75.35. 6	74. 4.49	72.34. 8	71. 3. 4
	23	69.31.36	67.59.43	66.27.26	64.54.43	63.21.36	61.48. 3	60.14. 4	58.39.39
	24	57. 4.49	55.29.32	53.53.49	52.17.41	50.41. 7	49. 4. 7	47.26.41	45.48.51
	25	44.10.35	42.31.54	40.52.49	39.13.20	37.33.25			
Regulus.	29	- - -	- - -	- - -	- - -	60.17.42	58.24.24	56.31.16	54.38.17
	30	52.45.28	50.52.51	49. 0.28	47. 8.20	45.16.26	43.24.49	41.33.31	39.42.32
	31	37.51.53	36. 1.34	34.11.38	32.22. 7	30.33. 0	28.44.20	26.56. 9	25. 8.29
	Jul.1	23.21.18							

CONFIGURATIONS of the SATELLITES of JUPITER  
at XI o'Clock in the *Evening*.

1	3 ●	4.		.1	○	2.			
2	2.			2 6 3	○				1 ●
3	.4		.3		○	1 6 2			
4		.4		.3	1.	○		2.	
5		.4		2.		○	.3.1		
6				2 6 1.4	○			.3	
7					○	.4. 2.		3.	
8				.1	○	2 6 3		.4	
9				2 6 3	○	1.			.4
10	1. 0 2. 0		3.		○				.4
11			.3		1. ○		2.		4
12			2.		○	.3.1			4.
13			.2	1.	○		.3	4.	
14					○	1. .2	4.	3.	
15	4 6			.1	○	2 6 3			
16				2 6 4 3.	○	1.			
17		4.	3.		1 6 2 ○				
18	4.		.3		○		2.		1 ●
19	4.			2.	○	.1			3. ○
20	.4		.2	1.	○		.3		
21		.4			○	1 6 2		3.	
22			.4	.1	○	2 6 3			
23				2. 3. .4	○	1.			
24			3.		1 6 2 ○		.4		
25	1 ●		.3		○		.2 .4		
26	2 ●			.3	○	.1			.4
27			.2	1.	○		.3		.4
28					○	1 6 2		3.	4.
29			1.		○		2. 3.		4.
30			2.	3.	○	1.		4.	
31			3.	.2.1	○		4.		

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON. D. H. M. ☾ First Quarter - - - - 3. 20. 10 ○ Full Moon - - - - 11. 17. 40 ☾ Last Quarter - - - - 19. 18. 33 ● New Moon - - - - 26. 11. 13
Sa.	1	Nicomede.	Other Phenomena. D. H. M. 2. 1. 30 ☾ ☿ ♏ 2. - - ☿ α ♏, * 53' S. 2. 6. 0 ☾ ♏ 2. 14. 46 ☾ ♏ 4. 11. 34 I. of ♏, * 4 <sup>1</sup> / <sub>2</sub> S. of ♏'s C 4. 12. 31 E. of ♏, * 3 <sup>1</sup> / <sub>2</sub>
Sun.	2	Whit-Sunday.	10. 10. 1 ☾ ♂ ♏
M.	3	Whit-Monday.	11. 13. 31 ☾ ♏ Ophiuchi.
Tu.	4	Whit-Tu. K. Geo. III. b.	12. - - ♏ Stationary.
W.	5	D. of Cumb. b. Bonif.	12. 19. 51 ☾ ♏
Th.	6		14. - - ☿ ♏, * 59' S.
F.	7		17. 13. 12 I. of ♏, * 2 <sup>1</sup> / <sub>2</sub> S. of ♏'s C.
Sa.	8		17. 14. 22 1/2 E. of ♏, * 6 <sup>1</sup> / <sub>4</sub>
Sun.	9	Trinity-Sunday.	19. - - ☿ ♏, * 9' N.
M.	10	On mor. of H. Tr. 1 ret.	21. 10. 49 ☾ enters ♏
Tu.	11	St. Barnabas.	21. 16. 16 ☾ ♏
W.	12	Oxford Term begins.	23. 23. 35 ☾ ♏ Pleiadum.
Th.	13		24. - - ♏ ♏, * 46' S.
F.	14	Trinity Term begins.	25. - - ☿ ♏, * 28' N.
Sa.	15		26. - - ☾ eclipsed, invisible.
Sun.	16	1 <sup>st</sup> Sunday after Trinity.	27. - - ☾ Stationary.
M.	17	In 8 Days of H. T. 2 ret.	29. - - ☿ ♏, * 28' N.
Tu.	18	[St. Alban.	29. 10. 19 ☾ ♏
W.	19		29. 14. 40 ☾ ♏
Th.	20	Tr. of Edw. K. of W. S.	29. 23. 9 ☾ ♏
F.	21		
Sa.	22		
Sun.	23	2 <sup>d</sup> Sunday after Trinity.	
M.	24	St. John Bapt. In 15 days	
Tu.	25	[of H. Tr. 3 ret.	
W.	26		
Th.	27		
F.	28		
Sa.	29	St. Peter.	
Sun.	30	3 <sup>d</sup> Sunday after Trinity.	

Days of the Week.	Days of the Month.	THE S U N ' s			Equation	Diff.
		Longitude.	R <sup>t</sup> . Ascen.	Declin.	of Time.	
			<i>in Time.</i>	<i>North.</i>	<i>Sub.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	2. 10. 27. 59	4. 35. 25, 3	22. 2. 26	2. 39, 3.	9, 0
Sun.	2	2. 11. 25. 26	4. 39. 30, 9	22. 10. 29	2. 30, 3	9, 3
M.	3	2. 12. 22. 52	4. 43. 36, 8	22. 18. 10	2. 21, 0	9, 8
Tu.	4	2. 13. 20. 16	4. 47. 43, 2	22. 25. 27	2. 11, 2	10, 1
W.	5	2. 14. 17. 40	4. 51. 49, 8	22. 32. 20	2. 1, 1	10, 4
Th.	6	2. 15. 15. 2	4. 55. 56, 8	22. 38. 50	1. 50, 7	10, 6
F.	7	2. 16. 12. 23	5. 0. 4, 1	22. 44. 56	1. 40, 1	11, 0
Sa.	8	2. 17. 9. 44	5. 4. 11, 6	22. 50. 39	1. 29, 1	11, 2
Sun.	9	2. 18. 7. 3	5. 8. 19, 4	22. 55. 57	1. 17, 9	11, 5
M.	10	2. 19. 4. 21	5. 12. 27, 5	23. 0. 51	1. 6, 4	11, 7
Tu.	11	2. 20. 1. 39	5. 16. 35, 8	23. 5. 21	0. 54, 7	11, 9
W.	12	2. 20. 58. 56	5. 20. 44, 3	23. 9. 26	0. 42, 8	12, 1
Th.	13	2. 21. 56. 12	5. 24. 53, 0	23. 13. 7	0. 30, 7	12, 3
F.	14	2. 22. 53. 28	5. 29. 1, 9	23. 16. 23	0. 18, 4	12, 5
Sa.	15	2. 23. 50. 44	5. 33. 10, 9	23. 19. 16	0. 5, 9	12, 6
Sun.	16	2. 24. 47. 59	5. 37. 20, 1	23. 21. 43	Add 6, 7	12, 7
M.	17	2. 25. 45. 13	5. 41. 29, 4	23. 23. 46	0. 19, 4	12, 8
Tu.	18	2. 26. 42. 28	5. 45. 38, 8	23. 25. 24	0. 32, 2	12, 9
W.	19	2. 27. 39. 43	5. 49. 48, 3	23. 26. 37	0. 45, 1	13, 0
Th.	20	2. 28. 36. 57	5. 53. 57, 9	23. 27. 26	0. 58, 1	13, 0
F.	21	2. 29. 34. 11	5. 58. 7, 4	23. 27. 49	1. 11, 1	13, 0
Sa.	22	3. 0. 31. 26	6. 2. 17, 1	23. 27. 48	1. 24, 1	13, 0
Sun.	23	3. 1. 28. 40	6. 6. 26, 6	23. 27. 22	1. 37, 1	12, 9
M.	24	3. 2. 25. 54	6. 10. 36, 2	23. 26. 31	1. 50, 0	12, 9
Tu.	25	3. 3. 23. 9	6. 14. 45, 6	23. 25. 15	2. 2, 9	12, 8
W.	26	3. 4. 20. 22	6. 18. 55, 0	23. 23. 35	2. 15, 7	12, 6
Th.	27	3. 5. 17. 36	6. 23. 4, 2	23. 21. 30	2. 28, 3	12, 5
F.	28	3. 6. 14. 50	6. 27. 13, 3	23. 19. 0	2. 40, 8	12, 3
Sa.	29	3. 7. 12. 4	6. 31. 22, 1	23. 16. 6	2. 53, 1	12, 1
Sun.	30	3. 8. 9. 17	6. 35. 30, 9	23. 12. 47	3. 5, 2	

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 1	15. 47, 5	2. 23, 6	0. 006304	9. 18. 33
7	1. 8, 5	15. 46, 8	2. 23, 4	0. 006611	9. 18. 14
13	1. 8, 7	15. 46, 2	2. 23, 2	0. 006863	9. 17. 55
19	1. 8, 7	15. 45, 8	2. 23, 1	0. 007068	9. 17. 36
25	1. 8, 7	15. 45, 6	2. 23, 0	0. 007200	9. 17. 17

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	14. 43. 3	2	14. 23. 53	6	7. 15. 22 Im.
3	9. 11. 39	6	3. 40. 58	* 6	9. 28. 31 E.
5	3. 40. 24	9	16. 58. 9	* 13	11. 14. 46 Im.
6	22. 9. 0	13	6. 15. 19	* 13	13. 28. 50 E.
8	16. 37. 45	16	19. 32. 37	20	15. 13. 40 Im.
* 10	11. 6. 22	20	8. 49. 54	20	17. 28. 33 E.
12	5. 35. 8	23	22. 7. 16	27	19. 12. 42 Im.
14	0. 3. 46	* 27	11. 24. 40	27	21. 28. 29 E.
15	18. 32. 33				
* 17	13. 1. 12				
19	7. 29. 59				
21	1. 58. 39				
22	20. 27. 26				
24	14. 56. 6				
* 26	9. 24. 53				
28	3. 53. 35				
29	22. 22. 23				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY.							
♿ Gr. Elong. 14 <sup>d</sup> .							
1	9. 3. 35	5. 11 S	1. 23. 36	3. 50 S	14. 59 N	22. 50	
4	9. 12. 14	5. 50	1. 24. 0	4. 0	14. 55	22. 40	
7	9. 21. 14	6. 22	1. 25. 4	4. 0	15. 10	22. 33	
10	10. 0. 40	6. 45	1. 26. 47	3. 52	15. 41	22. 28	
13	10. 10. 42	6. 58	1. 29. 6	3. 36	16. 28	22. 26	
16	10. 21. 26	6. 58	2. 2. 2	3. 14	17. 25	22. 26	
19	11. 3. 4	6. 42	2. 5. 29	2. 47	18. 30	22. 28	
22	11. 15. 45	6. 5	2. 9. 29	2. 16	19. 39	22. 32	
25	11. 29. 38	5. 5	2. 13. 59	1. 42	20. 49	22. 39	
28	0. 14. 51	3. 38	2. 18. 59	1. 6	21. 55	22. 48	
30	0. 25. 44	2. 26	2. 22. 34	0. 41	22. 34	22. 56	
♀ VENUS.							
1	2. 13. 36	0. 5 S	2. 11. 46	0. 2 S	22. 11 N	0. 6	
7	2. 23. 17	0. 30 N	2. 19. 9	0. 12 N	23. 14	0. 13	
13	3. 2. 59	1. 3	2. 26. 30	0. 26	23. 51	0. 20	
19	3. 12. 42	1. 35	3. 3. 53	0. 40	24. 4	0. 27	
25	3. 22. 26	2. 4	3. 11. 15	0. 52	23. 51	0. 35	
♂ MARS.							
1	6. 3. 23	1. 18 N	4. 26. 31	1. 22 N	13. 59 N	5. 21	
7	6. 6. 5	1. 14	4. 29. 37	1. 16	12. 48	5. 8	
13	6. 8. 48	1. 10	5. 2. 48	1. 9	11. 34	4. 55	
19	6. 11. 32	1. 6	5. 6. 3	1. 3	10. 17	4. 42	
25	6. 14. 17	1. 2	5. 9. 23	0. 57	8. 57	4. 30	
♃ JUPITER.							
1	8. 2. 11	0. 47 N	8. 0. 15	0. 57 N	19. 18 S	11. 16	
7	8. 2. 39	0. 46	7. 29. 32	0. 57	19. 9	10. 48	
13	8. 3. 7	0. 46	7. 28. 51	0. 56	19. 1	10. 21	
19	8. 3. 35	0. 45	7. 28. 14	0. 54	18. 54	9. 53	
25	8. 4. 4	0. 45	7. 27. 42	0. 53	18. 48	9. 26	
♄ SATURN.							
1	6. 14. 48	2. 29 N	6. 9. 32	2. 37 N	1. 22 S	8. 2	
7	6. 15. 0	2. 29	6. 9. 27	2. 36	1. 21	7. 37	
13	6. 15. 12	2. 29	6. 9. 26	2. 34	1. 23	7. 13	
19	6. 15. 24	2. 29	6. 9. 28	2. 33	1. 25	6. 48	
25	6. 15. 35	2. 29	6. 9. 35	2. 32	1. 29	6. 23	
♁ GEORGIAN.							
1	6. 19. 36	0. 37 N	6. 17. 3	0. 38 N	6. 7 S	8. 27	
11	6. 19. 43	0. 37	6. 16. 54	0. 38	6. 4	7. 45	
21	6. 19. 51	0. 37	6. 16. 50	0. 38	6. 2	7. 4	

Days of the Week.	Days of the Month.	T H E M O O N ' s							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Sa.	1	4. 3. 51. 25		4. 11. 0. 43		1. 30. 50 S		2. 7. 26 S	
Sun.	2	4. 18. 4. 5		4. 25. 1. 29		2. 41. 35		3. 12. 51	
M.	3	5. 1. 53. 0		5. 8. 38. 43		3. 40. 52		4. 5. 24	
Tu.	4	5. 15. 18. 52		5. 21. 53. 46		4. 26. 15		4. 43. 16	
W.	5	5. 28. 23. 42		6. 4. 49. 2		4. 56. 26		5. 5. 40	
Th.	6	6. 11. 10. 8		6. 17. 27. 21		5. 11. 4		5. 12. 38	
F.	7	6. 23. 41. 1		6. 29. 51. 31		5. 10. 29		5. 4. 45	
Sa.	8	7. 5. 59. 8		7. 12. 4. 12		4. 55. 32		4. 43. 4	
Sun.	9	7. 18. 7. 0		7. 24. 7. 50		4. 27. 29		4. 9. 0	
M.	10	8. 0. 6. 54		8. 6. 4. 31		3. 47. 51		3. 24. 16	
Tu.	11	8. 12. 0. 52		8. 17. 56. 16		2. 58. 32		2. 30. 53	
W.	12	8. 23. 50. 55		8. 29. 45. 5		2. 1. 38		1. 31. 8	
Th.	13	9. 5. 39. 6		9. 11. 33. 11		0. 59. 38 S		0. 27. 27 S	
F.	14	9. 17. 27. 43		9. 23. 23. 0		0. 5. 7 N		0. 37. 42 N	
Sa.	15	9. 29. 19. 25		10. 5. 17. 22		1. 10. 1		1. 41. 43	
Sun.	16	10. 11. 17. 16		10. 17. 19. 32		2. 12. 30		2. 42. 0	
M.	17	10. 23. 24. 40		10. 29. 33. 8		3. 9. 55		3. 35. 53	
Tu.	18	11. 5. 45. 27		11. 12. 2. 5		3. 59. 38		4. 20. 46	
W.	19	11. 18. 23. 33		11. 24. 50. 17		4. 39. 0		4. 53. 58	
Th.	20	0. 1. 22. 46		0. 8. 1. 21		5. 5. 23		5. 12. 57	
F.	21	0. 14. 46. 19		0. 21. 37. 54		5. 16. 18		5. 15. 15	
Sa.	22	0. 28. 36. 10		1. 5. 41. 3		5. 9. 36		4. 59. 12	
Sun.	23	1. 12. 52. 21		1. 20. 9. 38		4. 43. 57		4. 23. 57	
M.	24	1. 27. 32. 23		2. 4. 59. 52		3. 59. 20		3. 30. 24	
Tu.	25	2. 12. 31. 7		2. 20. 5. 6		2. 57. 34		2. 21. 25	
W.	26	2. 27. 40. 43		3. 5. 16. 43		1. 42. 37		1. 1. 56 N	
Th.	27	3. 12. 51. 52		3. 20. 24. 56		0. 20. 13 N		0. 21. 41 S	
F.	28	3. 27. 54. 59		4. 5. 21. 0		1. 2. 57 S		1. 42. 46	
Sa.	29	4. 12. 42. 2		4. 19. 57. 26		2. 20. 26		2. 55. 21	
Sun.	30	4. 27. 6. 45		5. 4. 9. 38		3. 27. 0		3. 55. 0	



		T H E M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	5	3.57	125.48	132.52	17.50 N	15.27 N
Sun.	2	6	4.49	139.39	146.13	12.52	10.10
M.	3	7	5.37	152.34	158.44	7.22	4.32 N
Tu.	4	8	6.23	164.46	170.42	1.42 N	1.7 S
W.	5	9	7.7	176.34	182.23	3.54 S	6.35
Th.	6	10	7.51	188.13	194.3	9.11	11.40
F.	7	11	8.35	199.57	205.55	14.0	16.11
Sa.	8	12	9.21	211.57	218.5	18.11	19.58
Sun.	9	13	10.9	224.19	230.39	21.32	22.51
M.	10	14	10.58	237.3	243.32	23.55	24.42
Tu.	11	15	11.47	250.4	256.38	25.12	25.25
W.	12	16	12.37	263.12	269.44	25.21	24.59
Th.	13	17	13.26	276.12	282.36	24.20	23.25
F.	14	18	14.14	288.55	295.7	22.14	20.49
Sa.	15	19	14.59	301.13	307.13	19.10	17.19
Sun.	16	20	15.43	313.7	318.56	15.17	13.5
M.	17	21	16.26	324.41	330.24	10.44	8.16
Tu.	18	22	17.8	336.5	341.47	5.42	3.2 S
W.	19	23	17.52	347.31	353.19	0.19 S	2.27 N
Th.	20	24	18.38	359.14	5.17	5.13 N	7.58
F.	21	25	19.28	11.31	17.58	10.41	13.18
Sa.	22	26	20.22	24.40	31.38	15.48	18.8
Sun.	23	27	21.20	38.53	46.26	20.13	22.2
M.	24	28	22.23	54.16	62.21	23.31	24.36
Tu.	25	29	23.29	70.38	79.1	25.15	25.27
W.	26	1	0	87.26	95.48	25.9	24.23
Th.	27	2	0.34	104.1	112.2	23.11	21.33
F.	28	3	1.35	119.47	127.17	19.34	17.17
Sa.	29	4	2.32	134.29	141.26	14.46	12.4
Sun.	30	5	3.24	148.8	154.37	9.14	6.21

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sa.	1	16. 21	16. 15	60. 0	59. 37	4771	4799
Sun.	2	16. 8	16. 1	59. 11	58. 45	4831	4863
M.	3	15. 53	15. 46	58. 19	57. 53	4895	4927
Tu.	4	15. 40	15. 33	57. 28	57. 4	4958	4989
W.	5	15. 27	15. 21	56. 42	56. 20	5017	5045
Th.	6	15. 16	15. 11	56. 0	55. 42	5071	5094
F.	7	15. 6	15. 2	55. 26	55. 11	5115	5134
Sa.	8	14. 59	14. 56	54. 58	54. 47	5152	5166
Sun.	9	14. 53	14. 51	54. 36	54. 28	5181	5191
M.	10	14. 49	14. 47	54. 21	54. 15	5201	5209
Tu.	11	14. 46	14. 45	54. 11	54. 8	5214	5218
W.	12	14. 45	14. 45	54. 7	54. 6	5219	5221
Th.	13	14. 45	14. 46	54. 7	54. 10	5219	5215
F.	14	14. 47	14. 48	54. 14	54. 19	5210	5203
Sa.	15	14. 50	14. 52	54. 26	54. 35	5194	5182
Sun.	16	14. 55	14. 59	54. 46	54. 59	5167	5150
M.	17	15. 3	15. 7	55. 13	55. 29	5132	5111
Tu.	18	15. 12	15. 17	55. 47	56. 7	5087	5062
W.	19	15. 23	15. 30	56. 29	56. 53	5033	5003
Th.	20	15. 37	15. 44	57. 18	57. 44	4971	4938
F.	21	15. 51	15. 59	58. 11	58. 38	4905	4871
Sa.	22	16. 6	16. 14	59. 6	59. 33	4837	4804
Sun.	23	16. 20	16. 27	59. 58	60. 22	4773	4745
M.	24	16. 33	16. 38	60. 43	61. 1	4719	4698
Tu.	25	16. 41	16. 44	61. 15	61. 24	4682	4671
W.	26	16. 45	16. 45	61. 29	61. 29	4665	4665
Th.	27	16. 44	16. 41	61. 23	61. 14	4672	4683
F.	28	16. 37	16. 32	61. 0	60. 42	4699	4721
Sa.	29	16. 26	16. 20	60. 20	59. 56	4747	4776
Sun.	30	16. 13	16. 5	59. 29	59. 2	4809	4842

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica $\eta$	1	77. 14. 10	75. 26. 6	73. 38. 26	71. 51. 9	70. 4. 15	68. 17. 45	66. 31. 39	64. 45. 56								
	2	63. 0. 38	61. 15. 45	59. 31. 15	57. 47. 10	56. 3. 29	54. 20. 12	52. 37. 19	50. 54. 51								
	3	49. 12. 46	47. 31. 6	45. 49. 49	44. 8. 56	42. 28. 27	40. 48. 21	39. 8. 39	37. 29. 20								
	4	35. 50. 24	34. 11. 50	32. 33. 40	30. 55. 53	29. 18. 29	27. 41. 29	26. 4. 52	24. 28. 39								
	5	22. 52. 49															
Antares.	5	68. 23. 42	66. 47. 18	65. 11. 12	63. 35. 22	61. 59. 50	60. 24. 35	58. 49. 34	57. 14. 50								
	6	55. 40. 21	54. 6. 7	52. 32. 6	50. 58. 20	49. 24. 48	47. 51. 29	46. 18. 23	44. 45. 30								
	7	43. 12. 49	41. 40. 19	40. 8. 1	38. 35. 53	37. 3. 57	35. 32. 11	34. 0. 35	32. 29. 9								
	8	30. 57. 53															
$\alpha$ Aquilæ.	8	86. 22. 34	85. 2. 10	83. 41. 57	82. 21. 54	81. 2. 2	79. 42. 22	78. 22. 54	77. 3. 40								
	9	75. 44. 38	74. 25. 50	73. 7. 17	71. 49. 0	70. 30. 58	69. 13. 13	67. 55. 47	66. 38. 41								
	10	65. 21. 53	64. 5. 26	62. 49. 22	61. 39. 41	60. 18. 22											
	10	- - -	- - -	- - -	- - -	84. 9. 36	82. 48. 38	81. 27. 46	80. 7. 0								
Fomalhaut.	11	78. 46. 21	77. 25. 49	76. 5. 26	74. 45. 11	73. 25. 5	72. 5. 8	70. 45. 22	69. 25. 47								
	12	68. 6. 22	66. 47. 9	65. 28. 10	64. 9. 25	62. 50. 54	61. 32. 39	60. 14. 41	58. 57. 2								
	13	57. 39. 39															
	13	76. 20. 2	74. 54. 17	73. 28. 33	72. 2. 51	70. 37. 10	69. 11. 30	67. 45. 53	66. 20. 17								
$\alpha$ Pegasi.	14	64. 54. 44	63. 29. 13	62. 3. 44	60. 38. 19	59. 12. 57	57. 47. 37	56. 22. 22	54. 57. 11								
	15	53. 32. 4	52. 7. 1	50. 42. 6	49. 17. 18	47. 52. 37	46. 28. 5	45. 3. 43	43. 39. 30								
	16	42. 15. 32															

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	16	83. 22. 13	81. 52. 0	80. 21. 39	78. 51. 9	77. 20. 29	75. 49. 40	74. 18. 42	72. 47. 33
	17	71. 16. 14	69. 44. 44	68. 13. 3	66. 41. 11	65. 9. 6	63. 36. 49	62. 4. 18	60. 31. 35
	18	58. 58. 38	57. 25. 27	55. 52. 2	54. 18. 22	52. 44. 28	51. 10. 18	49. 35. 52	48. 1. 10
	19	46. 26. 12	44. 50. 58	43. 15. 28	41. 39. 41	40. 3. 38	38. 27. 18	36. 50. 40	35. 13. 45
	20	33. 36. 33							
The Sun.	17	122. 17. 13	120. 52. 33	119. 27. 40	118. 3. 36	116. 37. 18	115. 11. 47	113. 46. 2	112. 20. 2
	18	110. 53. 49	109. 27. 20	108. 0. 36	106. 33. 35	105. 6. 19	103. 38. 46	102. 10. 54	100. 42. 46
	19	99. 14. 19	97. 45. 34	96. 16. 29	94. 47. 4	93. 17. 20	91. 47. 15	90. 16. 48	88. 46. 0
	20	87. 14. 50	85. 43. 18	84. 11. 24	82. 39. 7	81. 6. 27	79. 33. 24	77. 59. 56	76. 26. 5
	21	74. 51. 49	73. 17. 8	71. 42. 2	70. 6. 32	68. 30. 36	66. 54. 15	65. 17. 29	63. 40. 18
Spica ♀	22	62. 2. 41	60. 24. 39	58. 46. 11	57. 7. 18	55. 28. 0	53. 48. 16	52. 8. 8	50. 27. 36
	23	48. 46. 39	47. 5. 18	45. 23. 34	43. 41. 27	41. 58. 58	40. 16. 6	38. 32. 54	
	28	83. 11. 9	81. 18. 57	79. 27. 3	77. 35. 29	75. 44. 13	73. 53. 17	72. 2. 43	70. 12. 30
	29	68. 22. 39	66. 33. 11	64. 44. 7	62. 55. 26	61. 7. 10	59. 19. 19	57. 31. 54	55. 44. 54
	30 J. 1	53. 58. 20 40. 2. 2	52. 12. 13	50. 20. 32	48. 41. 18	46. 56. 32	45. 12. 13	43. 28. 21	41. 44. 58

# *DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	53.24.19	55. 5.10	56.45.37	58.25.41	60. 5.23	61.44.41	63.23.36	65. 2. 8	60. 5.23	61.44.41	63.23.36	65. 2. 8	63.23.36	65. 2. 8	65. 2. 8	65. 2. 8
	2	66.40.17	68.18. 2	69.55.24	71.32.23	73. 8.58	74.45.10	76.20.59	77.56.25	73. 8.58	74.45.10	76.20.59	77.56.25	76.20.59	77.56.25	77.56.25	77.56.25
	3	79.31.27	81. 6. 6	82.40.22	84.14.16	85.47.48	87.20.57	88.53.44	90.26.10	85.47.48	87.20.57	88.53.44	90.26.10	88.53.44	90.26.10	90.26.10	90.26.10
	4	91.58.14	93.29.58	95. 1.22	96.32.25	98. 3. 9	99.33.32	101. 3.37	102.33.23	98. 3. 9	99.33.32	101. 3.37	102.33.23	101. 3.37	102.33.23	102.33.23	102.33.23
	5	104. 2.50	105.31.59	107. 0.51	108.29.26	109.57.43	111.25.44	112.53.31	114.21. 1	109.57.43	111.25.44	112.53.31	114.21. 1	112.53.31	114.21. 1	114.21. 1	114.21. 1
	6	115.48.16	117.15.16	118.42. 2	120. 8.34	121.34.52	123.11.53	124.54.48	126.42.48	121.34.52	123.11.53	124.54.48	126.42.48	124.54.48	126.42.48	126.42.48	126.42.48
Regulus.	4	18.48.57	20.26. 5	22. 3. 3	23.39.53	25.16.35	26.53. 7	28.29.27	30. 5.35	25.16.35	26.53. 7	28.29.27	30. 5.35	28.29.27	30. 5.35	30. 5.35	30. 5.35
	5	31.41.31	33.17.12	34.52.39	36.27.52	38. 2.52	39.37.37	41.12. 8	42.46.26	38. 2.52	39.37.37	41.12. 8	42.46.26	41.12. 8	42.46.26	42.46.26	42.46.26
	6	44.20.30	45.54.21	47.27.59	49. 1.24	50.34.37	52. 7.37	53.40.26	55.13. 3	50.34.37	52. 7.37	53.40.26	55.13. 3	53.40.26	55.13. 3	55.13. 3	55.13. 3
	7	56.45.29	58.17.43	59.49.48	61.21.42	62.53.26	64.25. 0	65.56.25	67.27.41	62.53.26	64.25. 0	65.56.25	67.27.41	65.56.25	67.27.41	67.27.41	67.27.41
	8	68.58.48	70.29.46	72. 0.37	73.31.19	75. 1.53	76.42.48	78.29.27	80.11.29	75. 1.53	76.42.48	78.29.27	80.11.29	78.29.27	80.11.29	80.11.29	80.11.29
	9	70.48.48	72.20.46	74.01.44	75.42.48	77.23.52	79.04.48	80.45.48	82.26.48	77.23.52	79.04.48	80.45.48	82.26.48	80.45.48	82.26.48	82.26.48	82.26.48
Spica $\pi$	8	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	9	27. 2.37	28.32.12	30. 1.44	31.31.14	33. 0.41	34.30. 4	35.59.24	37.28.41	33. 0.41	34.30. 4	35.59.24	37.28.41	35.59.24	37.28.41	37.28.41	37.28.41
	10	38.57.55	40.27. 6	41.56.15	43.25.20	44.54.23	46.23.23	47.52.20	49.21.15	44.54.23	46.23.23	47.52.20	49.21.15	47.52.20	49.21.15	49.21.15	49.21.15
	11	50.50. 7	52.18.57	53.47.46	55.16.33	56.45.19	58.14. 3	59.42.47	61.11.29	56.45.19	58.14. 3	59.42.47	61.11.29	59.42.47	61.11.29	61.11.29	61.11.29
	12	62.40.10	64. 8.50	65.37.30	67. 6. 9	68.34.48	70.01.48	71.42.48	73.23.48	68.34.48	70.01.48	71.42.48	73.23.48	71.42.48	73.23.48	73.23.48	73.23.48
	13	74.23.48	76.04.48	77.45.48	79.26.48	81.07.48	82.48.48	84.29.48	86.10.48	81.07.48	82.48.48	84.29.48	86.10.48	84.29.48	86.10.48	86.10.48	86.10.48

Stars Names.	Days	Nov.	III.	VT.	IX.	Midnight.	XV.	XVIII.	XXI.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	12	- - -	- - -	- - -	- - -	22. 51. 49	24. 20. 22	25. 49. 5	27. 17. 49
	13	28. 46. 34	30. 15. 20	31. 44. 7	33. 12. 57	34. 41. 48	36. 10. 41	37. 39. 37	39. 8. 36
	14	40. 37. 37	42. 6. 41	43. 35. 49	45. 4. 59	46. 34. 13	48. 3. 31	49. 32. 55	51. 2. 22
	15	52. 31. 55	54. 1. 33	55. 31. 16	57. 1. 6	58. 31. 2	60. 1. 5	61. 31. 15	63. 1. 32
	16	64. 31. 57	66. 2. 29	67. 33. 10	69. 4. 0	70. 34. 59	72. 6. 8	73. 37. 27	75. 8. 57
	17	76. 40. 37	78. 12. 29	79. 44. 33	81. 16. 49	82. 49. 17	84. 21. 59	85. 54. 55	87. 28. 4
α Aquilæ.	18	89. 1. 28	90. 35. 7	92. 9. 0	93. 43. 10	95. 17. 35			
	19	- - -	- - -	- - -	- - -	47. 42. 13	48. 55. 51	50. 10. 34	51. 26. 19
	20	52. 43. 5	54. 0. 50	55. 19. 29	56. 39. 1	57. 59. 26	59. 20. 38	60. 42. 35	62. 5. 19
	21	63. 28. 47	64. 52. 57	66. 17. 46	67. 43. 16	69. 9. 25	70. 36. 10	72. 3. 31	73. 31. 27
	22	74. 59. 58	76. 29. 1	77. 58. 36	79. 28. 42	80. 59. 19			
α Pegasi.	23	- - -	- - -	- - -	- - -	33. 12. 9	34. 44. 31	36. 18. 5	37. 52. 47
	24	39. 28. 33	41. 5. 21	42. 43. 5	44. 21. 42	46. 1. 14	47. 41. 30	49. 22. 29	51. 4. 11
	25	52. 46. 36	54. 29. 29	56. 13. 17	57. 57. 29	59. 42. 14			
	26	- - -	- - -	- - -	- - -	16. 5. 6	17. 50. 24	19. 36. 41	21. 23. 53
α Arietis.	27	23. 11. 57	25. 0. 48	26. 50. 16	28. 40. 22	30. 31. 2	32. 22. 8	34. 13. 26	36. 5. 21
	28	37. 57. 21	- - -	- - -	- - -				
	29	- - -	- - -	38. 58. 37	40. 40. 21	42. 21. 41	44. 2. 37	45. 43. 7	47. 23. 13
The Sun.	30	49. 2. 54	50. 42. 8	52. 20. 57	53. 59. 19	55. 37. 16	57. 14. 46	58. 51. 49	60. 28. 26
	J. 1	62. 4. 36							

CONFIGURATIONS of the SATELLITES of JUPITER  
at X o'Clock in the *Evening*.

1		.3	4.	○	1.	.2
2	1.○	4.	.3	○	2.	
3		4.	.2	1.○		.3
4	4.			○	.2.1	.3
5	.4		1.	○		2.3.
6	.4		2.	3.○	.1	
7		.4	.2.1	○		
8		.3	.4	○	1.	.2
9	4♂		.3	.1○	2.	
10	1●		2.	○	.3	.4
11	2.○			○	.1	.3 .4
12			1.	○	2. 3.	.4
13	3●		2.	○	.1	.4
14			.2.1	○		
15		.3		○	1.	.2 .4.
16		.3	.1	○	2.	4.
17		2.		○	1. 4.	.3
18		4.	.2	○	.1	.3
19		4.	1.	○	2. 3.	
20	4.		2.	○	3. .1	
21	4.		.2 1.	○		
22	.4	.3		○	1. .2	
23	.4	.3	.1	○	2.	
24		.4	2.	○	1. .3	
25	1.○		.4 .2	○		.3
26			1.	○	.4 .2	3.
27	2●			○	.1	.4
28		.2	3. 1.	○		.4
29		3.		○	.2 1.	.4
30		.3	.1	○		.4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			☾ First Quarter - - - 3. 6. 31
			☾ Full Moon - - - - 11. 9. 2
			☾ Last Quarter - - - - 19. 3. 26
			● New Moon - - - - 25. 18. 21
			Other Phenomena.
			D. H. M.
			1. 18. 41 ☾ e ♈
			6. - - - ☿ σ ♈, * 56' North.
			7. 15. 55 ☾ σ ♏
			7. 19. 53 ☾ α ♏
			8. 19. 29 ☾ θ Ophiuchi.
			10. 1. 50 ☾ λ ♏
			11. - - - ☾ eclipsed, partly visible
			14. 19. 35 ☾ θ ♏
			18. 23. 22 ☾ η ♏
			20. - - - ☿ β ♏, * 7' North.
			21. 8. 26 ☾ η Pleiadum.
			22. 21. 41 ☉ enters ♏
			23. 2. 13 ☾ 125 ♏
			23. 5. 33 ☾ 132 ♏
			24. - - - ☾ Stationary.
			25. - - - ☉ eclipsed, invisible.
			29. 3. 37 ☾ e ♏
M.	1		
Tu.	2	Camb.Com. Vifit.of B.V	
W.	3	[Mary.	
Th.	4	Tr. of St. Mart.	
F.	5	Camb. Term ends.	
Sa.	6		
Sun.	7	4th Sunday after Trinity.	
M.	8	Oxford Act.	
Tu.	9		
W.	10		
Th.	11		
F.	12		
Sa.	13	Oxford Term ends.	
Sun.	14	5th Sunday after Trinity.	
M.	15	Swithin.	
Tu.	16		
W.	17		
Th.	18		
F.	19		
Sa.	20	Margaret.	
Sun.	21	6th Sunday after Trinity.	
M.	22	Magdalen.	
Tu.	23		
W.	24		
Th.	25	St. James.	
F.	26	St. Anne.	
Sa.	27		
Sun.	28	7th Sunday after Trinity.	
M.	29		
Tu.	30		
W.	31		



Days of the Week.	Days of the Month.	THE SUN'S			Equation	Diff.
		Longitude.	R <sup>t</sup> . Ascen.	Declin.	of Time.	
			<i>in Time.</i>	<i>North.</i>	<i>Add.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M.	1	3. 9. 6. 30	6. 39. 39, 3	23. 9. 4	3. 17, 0	
Tu.	2	3. 10. 3. 43	6. 43. 47, 5	23. 4. 56	3. 28, 6	11, 6
W.	3	3. 11. 0. 55	6. 47. 55, 4	23. 0. 24	3. 39, 9	11, 3
Th.	4	3. 11. 58. 7	6. 52. 3, 0	22. 55. 29	3. 50, 9	11, 0
F.	5	3. 12. 55. 19	6. 56. 10, 2	22. 50. 9	4. 1, 6	10, 7
Sa.	6	3. 13. 52. 31	7. 0. 17, 1	22. 44. 26	4. 11, 9	10, 3
Sun.	7	3. 14. 49. 42	7. 4. 23, 7	22. 38. 19	4. 21, 8	9, 9
M.	8	3. 15. 46. 54	7. 8. 29, 8	22. 31. 48	4. 31, 4	9, 6
Tu.	9	3. 16. 44. 5	7. 12. 35, 6	22. 24. 54	4. 40, 6	9, 2
W.	10	3. 17. 41. 17	7. 16. 40, 9	22. 17. 37	4. 49, 4	8, 8
Th.	11	3. 18. 38. 28	7. 20. 45, 8	22. 9. 57	4. 57, 7	8, 3
F.	12	3. 19. 35. 40	7. 24. 50, 3	22. 1. 54	5. 5, 6	7, 9
Sa.	13	3. 20. 32. 53	7. 28. 54, 3	21. 53. 28	5. 13, 1	7, 5
Sun.	14	3. 21. 30. 5	7. 32. 57, 9	21. 44. 40	5. 20, 1	7, 0
M.	15	3. 22. 27. 19	7. 37. 1, 0	21. 35. 29	5. 26, 6	6, 5
Tu.	16	3. 23. 24. 33	7. 41. 3, 6	21. 25. 57	5. 32, 7	6, 1
W.	17	3. 24. 21. 47	7. 45. 5, 8	21. 16. 2	5. 38, 3	5, 6
Th.	18	3. 25. 19. 3	7. 49. 7, 4	21. 5. 46	5. 43, 3	5, 0
F.	19	3. 26. 16. 19	7. 53. 8, 5	20. 55. 8	5. 47, 8	4, 5
Sa.	20	3. 27. 13. 36	7. 57. 9, 2	20. 44. 9	5. 51, 9	4, 1
Sun.	21	3. 28. 10. 54	8. 1. 9, 3	20. 32. 49	5. 55, 5	3, 6
M.	22	3. 29. 8. 13	8. 5. 8, 8	20. 21. 8	5. 58, 5	3, 0
Tu.	23	4. 0. 5. 33	8. 9. 7, 8	20. 9. 6	6. 0, 9	2, 4
W.	24	4. 1. 2. 54	8. 13. 6, 3	19. 56. 45	6. 2, 7	1, 8
Th.	25	4. 2. 0. 15	8. 17. 4, 1	19. 44. 3	6. 4, 0	1, 3
F.	26	4. 2. 57. 38	8. 21. 1, 4	19. 31. 1	6. 4, 8	0, 8
Sa.	27	4. 3. 55. 1	8. 24. 58, 0	19. 17. 41	6. 4, 9	0, 1
Sun.	28	4. 4. 52. 25	8. 28. 54, 1	19. 4. 0	6. 4, 4	0, 5
M.	29	4. 5. 49. 49	8. 32. 49, 6	18. 50. 1	6. 3, 3	1, 1
Tu.	30	4. 6. 47. 14	8. 36. 44, 5	18. 35. 44	6. 1, 6	1, 7
W.	31	4. 7. 44. 40	8. 40. 38, 7	18. 21. 8	5. 59, 3	2, 3

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 6	15. 45, 5	2. 23, 0	0. 007236	9. 16. 57
7	1. 8, 3	15. 45, 6	2. 23, 0	0. 007187	9. 16. 38
13	1. 7, 9	15. 45, 8	2. 23, 1	0. 007076	9. 16. 19
19	1. 7, 5	15. 46, 2	2. 23, 2	0. 006917	9. 16. 0
25	1. 7, 1	15. 46, 7	2. 23, 4	0. 006685	9. 15. 41

ECLIPSES of the SATELLITES of JUPITER,  
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	16. 51. 4	1	0. 42. 7	4	23. 11. 20 Im.
* 3	11. 19. 53	4	13. 59. 40	5	1. 27. 56 E.
5	5. 48. 35	8	3. 17. 12	12	3. 9. 55 Im.
7	0. 17. 24	11	16. 34. 49	12	5. 27. 22 E.
8	18. 46. 7	15	5. 52. 30	19	7. 8. 56 Im.
10	13. 14. 55	18	19. 10. 14	* 19	9. 27. 13 E.
12	7. 43. 38	22	8. 28. 0	26	11. 8. 2 Im.
14	2. 12. 28	25	21. 45. 51	26	13. 27. 13 E.
15	20. 41. 11	29	11. 3. 42		
17	15. 10. 1				
* 19	9. 38. 44				
21	4. 7. 35				
22	22. 36. 18				
24	17. 5. 8				
26	11. 33. 52				
28	6. 2. 42				
30	0. 31. 26				
31	19. 0. 16				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY. Sup. 6 14 <sup>d</sup> . 1 <sup>h</sup> .							
1	1. 1. 24	1. 46 S	2. 24. 27	0. 29 S	22. 52 N	23. 0	
4	1. 19. 11	0. 23 N	3. 0. 18	0. 6 N	23. 34	23. 13	
7	2. 7. 49	2. 37	3. 6. 29	0. 38	23. 57	23. 29	
10	2. 26. 45	4. 35	3. 12. 53	1. 5	23. 55	23. 45	
13	3. 15. 20	6. 2	3. 19. 19	1. 26	23. 29	0. 1	
16	4. 2. 57	6. 49	3. 25. 43	1. 40	22. 39	0. 11	
19	4. 19. 17	6. 59	4. 1. 58	1. 47	21. 29	0. 26	
22	5. 4. 10	6. 39	4. 8. 0	1. 48	20. 1	0. 39	
25	5. 17. 40	5. 58	4. 13. 48	1. 43	18. 20	0. 50	
28	5. 29. 56	5. 3	4. 19. 21	1. 33	16. 29	1. 0	
31	6. 11. 10	4. 1	4. 24. 40	1. 18	14. 33	1. 9	
♀ VENUS.							
1	4. 2. 11	2. 30 N	3. 18. 37	1. 3 N	23. 13 N	0. 42	
7	4. 11. 56	2. 51	3. 26. 0	1. 13	22. 10	0. 49	
13	4. 21. 41	3. 7	4. 3. 22	1. 20	20. 44	0. 55	
19	5. 1. 27	3. 18	4. 10. 44	1. 26	18. 56	1. 1	
25	5. 11. 11	3. 23	4. 18. 6	1. 29	16. 50	1. 7	
♂ MARS.							
1	6. 17. 3	0. 57 N	5. 12. 47	0. 52 N	7. 34 N	4. 18	
7	6. 19. 51	0. 53	5. 16. 13	0. 46	6. 9	4. 6	
13	6. 22. 39	0. 48	5. 19. 44	0. 41	4. 42	3. 54	
19	6. 25. 29	0. 43	5. 23. 17	0. 36	3. 13	3. 43	
25	6. 28. 19	0. 38	5. 26. 54	0. 31	1. 42	3. 32	
♃ JUPITER.							
1	8. 4. 32	0. 44 N	7. 27. 14	0. 52 N	18. 43 S	8. 59	
7	8. 5. 0	0. 44	7. 26. 53	0. 50	18. 40	8. 33	
13	8. 5. 28	0. 43	7. 26. 38	0. 49	18. 38	8. 8	
19	8. 5. 57	0. 42	7. 26. 30	0. 48	18. 37	7. 43	
25	8. 6. 25	0. 42	7. 26. 27	0. 46	18. 38	7. 10	
♄ SATURN. ☐ 1 <sup>d</sup> . 17 <sup>h</sup> .							
1	6. 15. 47	2. 29 N	6. 9. 45	2. 30 N	1. 34 S	5. 59	
7	6. 15. 59	2. 29	6. 9. 58	2. 29	1. 41	5. 35	
13	6. 16. 11	2. 29	6. 10. 14	2. 27	1. 48	5. 12	
19	6. 16. 23	2. 29	6. 10. 34	2. 26	1. 57	4. 49	
25	6. 16. 34	2. 29	6. 10. 56	2. 24	2. 7	4. 26	
♅ GEORGIAN. ☐ 9 <sup>d</sup> . 5 <sup>h</sup> .							
1	6. 19. 59	0. 37 N	6. 16. 50	0. 37 N	6. 35	6. 22	
11	6. 20. 6	0. 37	6. 16. 57	0. 37	6. 6	5. 42	
21	6. 20. 14	0. 37	6. 17. 8	0. 36	6. 10	5. 2	

Days of the Week. Days of the Month.		T H E M O O N ' s			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
M.	1	5. 11. 5. 55	5. 17. 55. 37	4. 19. 5 S	4. 39. 5 S
Tu.	2	5. 24. 38. 48	6. 1. 15. 43	4. 54. 55	5. 6. 32
W.	3	6. 7. 46. 42	6. 14. 12. 5	5. 14. 1	5. 17. 27
Th.	4	6. 20. 32. 19	6. 26. 47. 51	5. 16. 57	5. 12. 41
F.	5	7. 2. 59. 11	7. 9. 6. 47	5. 4. 49	4. 53. 31
Sa.	6	7. 15. 11. 8	7. 21. 12. 44	4. 39. 1	4. 21. 33
Sun.	7	7. 27. 12. 1	8. 3. 9. 27	4. 1. 19	3. 38. 33
M.	8	8. 9. 5. 28	8. 15. 0. 25	3. 13. 32	2. 46. 30
Tu.	9	8. 20. 54. 43	8. 20. 48. 43	2. 17. 43	1. 47. 31
W.	10	9. 2. 42. 40	9. 8. 37. 10	1. 16. 7	0. 43. 53 S
Th.	11	9. 14. 32. 15	9. 20. 28. 16	0. 11. 6 S	0. 21. 52 N.
F.	12	9. 26. 25. 30	10. 2. 24. 13	0. 54. 43 N	1. 27. 5
Sa.	13	10. 8. 24. 41	10. 14. 27. 11	1. 58. 39	2. 29. 3
Sun.	14	10. 20. 31. 57	10. 26. 39. 17	2. 57. 56	3. 24. 59
M.	15	11. 2. 49. 25	11. 9. 2. 43	3. 49. 50	4. 12. 12
Tu.	16	11. 15. 19. 28	11. 21. 39. 53	4. 31. 44	4. 48. 9
W.	17	11. 28. 4. 22	0. 4. 33. 8	5. 1. 19	5. 10. 29
Th.	18	0. 11. 6. 31	0. 17. 44. 47	5. 15. 55	5. 17. 13
F.	19	0. 24. 28. 7	1. 1. 16. 44	5. 14. 13	5. 6. 49
Sa.	20	1. 8. 10. 42	1. 15. 10. 4	4. 54. 54	4. 38. 30
Sun.	21	1. 22. 14. 46	1. 29. 24. 37	4. 17. 41	3. 52. 37
M.	22	2. 6. 39. 21	2. 13. 58. 31	3. 23. 33	2. 50. 54
Tu.	23	2. 21. 21. 34	2. 28. 47. 47	2. 15. 6	1. 36. 44
W.	24	3. 6. 16. 20	3. 13. 46. 21	0. 56. 33 N	0. 15. 16 N
Th.	25	3. 21. 16. 47	3. 28. 46. 34	0. 26. 20 S	1. 7. 23 S
F.	26	4. 6. 14. 38	4. 13. 39. 57	1. 47. 5	2. 24. 42
Sa.	27	4. 21. 1. 32	4. 28. 18. 32	2. 59. 35	3. 31. 7
Sun.	28	5. 5. 30. 13	5. 12. 35. 59	3. 58. 54	4. 22. 35
M.	29	5. 19. 35. 27	5. 26. 28. 19	4. 41. 57	4. 56. 56
Tu.	30	6. 3. 14. 32	6. 9. 54. 9	5. 7. 28	5. 13. 40
W.	31	6. 16. 27. 20	6. 22. 54. 23	5. 15. 40	5. 13. 36

T H E M O O N ' s								
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.		
				Noon.	Midnight.	Noon.	Midnight.	
		D.	H. M.	D. M.	D. M.	D. M.	D. M.	
M.	1	6	4. 12	160. 55	167. 5	3. 25 N	0. 30 N	
Tu.	2	7	4. 58	173. 8	179. 7	2. 23 S	5. 11 S	
W.	3	8	5. 43	185. 3	190. 59	7. 53	10. 29	
Th.	4	9	6. 28	196. 55	202. 54	12. 55	15. 12	
F.	5	10	7. 13	208. 57	215. 4	17. 17	19. 11	
Sa.	6	11	8. 0	221. 16	227. 33	20. 51	22. 17	
Sun.	7	12	8. 49	233. 54	240. 21	23. 29	24. 23	
M.	8	13	9. 38	246. 51	253. 23	25. 2	25. 23	
Tu.	9	14	10. 28	259. 55	266. 29	25. 27	25. 13	
W.	10	15	11. 18	272. 59	279. 26	24. 42	23. 55	
Th.	11	16	12. 6	285. 48	292. 5	22. 51	21. 33	
F.	12	17	12. 52	298. 16	304. 20	20. 0	18. 14	
Sa.	13	18	13. 37	310. 18	316. 11	16. 16	14. 8	
Sun.	14	19	14. 20	321. 58	327. 42	11. 51	9. 26	
M.	15	20	15. 2	333. 23	339. 4	6. 54	4. 17 S	
Tu.	16	21	15. 45	344. 44	350. 27	1. 37 S	1. 6 N	
W.	17	22	16. 30	356. 14	2. 7	3. 50 N	6. 33	
Th.	18	23	17. 16	8. 7	14. 18	9. 14	11. 51	
F.	19	24	18. 7	20. 40	27. 16	14. 21	16. 43	
Sa.	20	25	19. 2	34. 8	41. 15	18. 53	20. 50	
Sun.	21	26	20. 2	48. 38	56. 17	22. 30	23. 50	
M.	22	27	21. 5	64. 10	72. 14	24. 47	25. 20	
Tu.	23	28	22. 10	80. 26	88. 40	25. 26	25. 4	
W.	24	29	23. 13	96. 53	104. 59	24. 15	23. 0	
Th.	25	1	24. 6	112. 56	120. 40	21. 21	19. 20	
F.	26	2	0. 12	128. 10	135. 25	17. 0	14. 26	
Sa.	27	3	1. 7	142. 27	149. 15	11. 40	8. 46	
Sun.	28	4	1. 58	155. 51	162. 17	5. 48 N	2. 48 N	
M.	29	5	2. 47	168. 36	174. 48	0. 12 S	3. 8 S	
Tu.	30	6	3. 34	180. 56	187. 1	6. 0	8. 44	
W.	31	7	4. 20	193. 6	199. 11	11. 20	13. 46	

Days of the Week.	Days of the Month.	T H E M O O N ' s				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
M.	1	15. 57	15. 50	58. 33	58. 5	4877	4912
Tu.	2	15. 42	15. 35	57. 37	57. 10	4947	4981
W.	3	15. 28	15. 21	56. 45	56. 21	5013	5044
Th.	4	15. 15	15. 10	55. 59	55. 39	5072	5098
F.	5	15. 5	15. 0	55. 20	55. 3	5123	5145
Sa.	6	14. 56	14. 53	54. 50	54. 38	5162	5178
Sun.	7	14. 51	14. 48	54. 28	54. 20	5191	5202
M.	8	14. 47	14. 46	54. 14	54. 10	5210	5215
Tu.	9	14. 45	14. 45	54. 8	54. 8	5218	5218
W.	10	14. 45	14. 46	54. 8	54. 10	5218	5215
Th.	11	14. 47	14. 48	54. 14	54. 19	5210	5203
F.	12	14. 50	14. 52	54. 25	54. 32	5195	5186
Sa.	13	14. 54	14. 57	54. 40	54. 50	5175	5162
Sun.	14	15. 0	15. 3	55. 1	55. 14	5148	5130
M.	15	15. 7	15. 11	55. 27	55. 42	5114	5094
Tu.	16	15. 15	15. 20	55. 58	56. 16	5073	5050
W.	17	15. 25	15. 31	56. 35	56. 55	5026	5000
Th.	18	15. 36	15. 42	57. 16	57. 38	4973	4946
F.	19	15. 49	15. 55	58. 1	58. 25	4917	4887
Sa.	20	16. 1	16. 8	58. 48	59. 11	4859	4831
Sun.	21	16. 14	16. 20	59. 34	59. 56	4802	4776
M.	22	16. 25	16. 30	60. 15	60. 32	4753	4733
Tu.	23	16. 34	16. 37	60. 46	60. 57	4716	4703
W.	24	16. 38	16. 39	61. 4	61. 6	4694	4692
Th.	25	16. 39	16. 38	61. 6	61. 1	4692	4698
F.	26	16. 35	16. 31	60. 51	60. 37	4710	4727
Sa.	27	16. 26	16. 20	60. 19	59. 58	4748	4773
Sun.	28	16. 14	16. 7	59. 33	59. 7	4804	4835
M.	29	15. 59	15. 52	58. 40	58. 12	4869	4903
Tu.	30	15. 44	15. 37	57. 44	57. 17	4938	4972
W.	31	15. 29	15. 23	56. 50	56. 2 6	5006	5037

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica $\eta$	1	40.	2. 2	38.	19. 33	36.	37. 32	34.	56. 0	33.	14. 56	31.	34. 20	29.	54. 13	28.	14. 36
	2	26.	35. 28	24.	56. 50	23.	18. 43	21.	41. 7	20.	4. 1						
Antares.	2	-	-	-	-	-	-	-	-	65.	32. 3	63.	54. 10	62.	16. 38	60.	39. 29
	3	59.	2. 42	57.	26. 16	55.	50. 11	54.	14. 26	52.	39. 2	51.	3. 57	49.	29. 10	47.	54. 42
	4	46.	20. 33	44.	46. 41	43.	13. 6	41.	39. 47	40.	6. 45	38.	33. 57	37.	1. 25	35.	29. 6
	5	33.	57. 2	32.	25. 12	30.	53. 34	29.	22. 9	27.	50. 57						
$\alpha$ Aquilæ.	5	-	-	-	-	-	-	-	-	83.	39. 50	82.	19. 37	80.	59. 36	79.	39. 49
	6	78.	20. 17	77.	0. 59	75.	41. 57	74.	23. 12	73.	4. 42	71.	46. 29	70.	28. 34	69.	10. 58
	7	67.	53. 40	66.	36. 41	65.	20. 4	64.	3. 47	62.	47. 51						
Fomalhaut.	7	-	-	-	-	-	-	-	-	86.	47. 52	85.	26. 57	84.	6. 8	82.	45. 24
	8	81.	24. 47	80.	4. 16	78.	43. 52	77.	23. 36	76.	3. 26	74.	43. 23	73.	23. 29	72.	3. 42
	9	70.	44. 6	69.	24. 38	68.	5. 21	66.	46. 15	65.	27. 21	64.	8. 38	62.	50. 10	61.	31. 57
	10	60.	13. 59	58.	56. 18	57.	38. 55	56.	21. 52	55.	5. 7						
$\alpha$ Pegasi.	10	-	-	-	-	-	-	-	-	73.	27. 51	72.	1. 57	70.	36. 4	69.	10. 11
	11	67.	44. 18	66.	18. 26	64.	52. 35	63.	26. 46	62.	9. 58	60.	35. 11	59.	9. 28	57.	43. 46
	12	56.	18. 8	54.	52. 33	53.	27. 4	52.	1. 40	50.	36. 21	49.	11. 9	47.	46. 6	46.	21. 10
	13	44.	56. 24														
$\alpha$ Arietis.	13	86.	14. 44	84.	44. 22	83.	23. 54	81.	43. 18	80.	12. 36	78.	41. 46	77.	10. 49	75.	39. 44
	14	74.	8. 32	72.	37. 11	71.	5. 42	69.	34. 4	68.	2. 18	66.	30. 23	64.	58. 20	63.	26. 7

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.
α Arietis.	15	61.	53.45	60.	21.13	58.	48.31	57.	15.38	55.	42.36	54.	9.23	52.	35.59	51.	2.24
	16	49.	28.39	47.	54.43	46.	20.37	44.	46.20	43.	11.52						
Aldebaran.	16	-	-	-	-	-	-	-	-	76.	0.1	74.	25.45	72.	51.17	71.	16.35
	17	69.	41.41	68.	6.33	66.	31.12	64.	55.37	63.	19.49	61.	43.46	60.	7.29	58.	30.58
	18	56.	54.13	55.	17.13	53.	40.0	52.	2.34	50.	24.54	48.	47.0	47.	8.55	45.	30.38
	19	43.	52.10	42.	13.31	40.	34.44	38.	55.48	37.	16.42						
The Sun.	16	-	-	-	-	-	-	-	-	122.	5.41	120.	37.20	119.	8.45	117.	39.56
	17	116.	10.53	114.	41.35	113.	12.0	111.	42.11	110.	12.5	108.	41.43	107.	11.3	105.	40.6
	18	104.	8.52	102.	37.19	101.	5.28	99.	33.18	98.	0.50	96.	28.3	94.	54.56	93.	21.30
	19	91.	47.45	90.	13.39	88.	39.12	87.	4.26	85.	29.18	83.	53.50	82.	18.1	80.	41.52
	20	79.	5.21	77.	28.29	75.	51.15	74.	13.40	72.	35.44	70.	57.26	69.	18.47	67.	39.48
	21	66.	0.27	64.	20.45	62.	40.43	61.	0.20	59.	19.37	57.	38.33	55.	57.11	54.	15.29
	22	52.	33.29	50.	51.10	49.	8.34	47.	25.41	45.	42.31	43.	59.5	42.	15.24	40.	31.28
	23	38.	47.18														
	27	60.	3.1	58.	13.24	56.	24.7	54.	35.11	52.	46.36	50.	58.23	49.	10.34	47.	23.9
Spica ♀	28	45.	36.7	43.	49.31	42.	3.22	40.	17.38	38.	32.21	36.	47.30	35.	3.7	33.	19.12
	29	31.	35.45														
Antares.	29	77.	10.1	75.	26.28	73.	43.21	72.	0.41	70.	18.26	68.	36.37	66.	55.14	65.	14.17
	30	63.	33.45	61.	53.39	60.	13.58	58.	34.42	56.	55.50	55.	17.23	53.	39.21	52.	1.41
	31	50.	24.26	48.	47.34	47.	11.3	45.	34.55	43.	59.9	42.	23.44	40.	48.39	39.	13.55
	A.1	37.	39.31														



*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
The Sun.	1	62.	4. 36	63. 40. 21	65. 15. 40	66. 50. 33	68. 25. 0	69. 59. 1	71. 32. 37	73. 5. 48	75. 16. 55	77. 42. 53	79. 14. 27	80. 45. 38	82. 16. 26	83. 46. 51	85. 16. 55
	2	74.	38. 34	76. 10. 55	77. 42. 53	79. 14. 27	80. 45. 38	82. 16. 26	83. 46. 51	85. 16. 55	87. 42. 53	89. 14. 27	90. 45. 38	92. 16. 26	93. 46. 51	95. 16. 55	97. 4. 55
	3	86.	46. 36	88. 15. 55	89. 44. 55	91. 13. 33	92. 41. 52	94. 9. 51	95. 37. 33	97. 4. 55	99. 32. 0	101. 25. 17	102. 51. 31	104. 17. 29	105. 43. 12	107. 8. 41	108. 33. 56
	4	98.	32. 0	99. 58. 47	101. 25. 17	102. 51. 31	104. 17. 29	105. 43. 12	107. 8. 41	108. 33. 56	110. 5. 15	111. 36. 50	112. 48. 17	114. 12. 40	115. 36. 50	117. 0. 49	118. 24. 37
	5	109.	58. 56	111. 23. 43	112. 48. 17	114. 12. 40	115. 36. 50	117. 0. 49	118. 24. 37	119. 48. 16	121. 11. 44	122. 36. 50	124. 12. 40	125. 37. 33	127. 12. 40	128. 37. 33	130. 12. 40
	6	121.	11. 44	122. 36. 50	124. 12. 40	125. 37. 33	127. 12. 40	128. 37. 33	130. 12. 40	131. 37. 33	133. 12. 40	134. 37. 33	136. 12. 40	137. 37. 33	139. 12. 40	140. 37. 33	142. 12. 40
Regulus.	3	40.	59. 33	42. 35. 30	44. 11. 8	45. 46. 28	47. 21. 29	48. 56. 12	50. 30. 38	52. 4. 46	54. 28. 20	56. 51. 21	58. 18. 33	60. 41. 44	62. 16. 26	63. 46. 51	65. 16. 55
	4	53.	38. 37	55. 12. 11	56. 45. 30	58. 18. 33	59. 51. 21	61. 23. 54	62. 56. 14	64. 28. 20	66. 0. 12	67. 31. 51	69. 3. 18	70. 34. 33	72. 5. 36	73. 36. 28	75. 7. 10
	5	66.	0. 12	67. 31. 51	69. 3. 18	70. 34. 33	72. 5. 36	73. 36. 28	75. 7. 10	76. 37. 42	78. 8. 4	79. 8. 11	80. 31. 3	81. 54. 45	82. 16. 26	83. 46. 51	85. 16. 55
	6	78.	8. 4	79. 8. 11	80. 31. 3	81. 54. 45	82. 16. 26	83. 46. 51	85. 16. 55	87. 42. 53	89. 14. 27	90. 45. 38	92. 16. 26	93. 46. 51	95. 16. 55	97. 4. 55	99. 32. 0
	7	24.	8. 59	25. 38. 37	27. 8. 11	28. 37. 40	29. 6. 51	30. 12. 40	31. 37. 33	32. 12. 40	33. 37. 33	34. 6. 51	35. 31. 3	36. 56. 14	37. 31. 51	38. 56. 14	40. 12. 40
	8	36.	4. 2	37. 33. 6	39. 2. 6	40. 31. 3	41. 59. 56	43. 28. 46	44. 57. 33	46. 26. 19	47. 55. 1	49. 23. 42	50. 52. 21	52. 20. 59	53. 49. 35	55. 18. 10	56. 46. 45
Spica $\pi$	9	47.	55. 1	49. 23. 42	50. 52. 21	52. 20. 59	53. 49. 35	55. 18. 10	56. 46. 45	58. 15. 19	59. 44. 51	61. 13. 32	62. 41. 2	64. 9. 38	65. 38. 14	67. 6. 51	68. 35. 30
	10	59.	43. 53	61. 12. 27	62. 41. 2	64. 9. 38	65. 38. 14	67. 6. 51	68. 35. 30	70. 4. 11	71. 32. 54	72. 61. 25	73. 30. 12	74. 58. 46	75. 27. 19	76. 56. 14	77. 85. 16
	11	71.	32. 54	72. 61. 25	73. 30. 12	74. 58. 46	75. 27. 19	76. 56. 14	77. 85. 16	78. 14. 27	79. 43. 12	80. 72. 0	81. 40. 56	82. 9. 51	83. 38. 14	84. 6. 51	85. 35. 30
	12	25.	49. 39	27. 18. 27	28. 47. 17	30. 16. 11	31. 45. 8	33. 14. 8	34. 43. 11	36. 12. 18	37. 41. 29	38. 70. 14	39. 99. 8	40. 28. 20	41. 57. 33	43. 26. 19	44. 55. 1
	13	37.	41. 29	39. 10. 43	40. 40. 2	42. 9. 24	43. 38. 51	45. 8. 22	46. 37. 58	48. 7. 39	49. 37. 25	50. 66. 10	51. 95. 5	52. 24. 37	53. 53. 22	54. 82. 7	55. 111. 21
	14	49.	37. 25	51. 7. 16	52. 37. 13	54. 7. 16	55. 37. 24	57. 7. 38	58. 37. 59	60. 8. 26	61. 38. 59	62. 68. 14	63. 97. 9	64. 26. 19	65. 55. 1	66. 84. 5	67. 113. 32
Antares.	1	61.	38. 59	63. 9. 39	64. 40. 27	66. 11. 21	67. 42. 23	69. 13. 32	70. 44. 49	72. 16. 15	73. 47. 26	74. 78. 11	75. 108. 16	76. 38. 14	77. 67. 6	78. 96. 14	79. 125. 19
	2	73.	47. 39	75. 18. 27	76. 49. 17	78. 20. 11	79. 50. 8	81. 20. 8	82. 50. 11	84. 20. 18	85. 50. 18	87. 20. 25	88. 50. 38	90. 20. 51	91. 50. 64	92. 80. 17	93. 110. 26
	3	85.	38. 34	87. 10. 55	88. 42. 53	90. 14. 27	91. 45. 38	93. 16. 26	94. 46. 51	96. 16. 55	97. 47. 26	98. 78. 11	100. 8. 26	101. 38. 14	102. 68. 14	103. 98. 14	104. 128. 19
	4	97.	38. 34	99. 10. 55	100. 42. 53	101. 14. 27	102. 45. 38	103. 16. 26	104. 46. 51	105. 16. 55	106. 47. 26	107. 78. 11	108. 8. 26	109. 38. 14	110. 68. 14	111. 98. 14	112. 128. 19
	5	109.	38. 34	111. 10. 55	112. 42. 53	113. 14. 27	114. 45. 38	115. 16. 26	116. 46. 51	117. 16. 55	118. 47. 26	119. 78. 11	120. 8. 26	121. 38. 14	122. 68. 14	123. 98. 14	124. 128. 19
	6	121.	38. 34	122. 10. 55	123. 42. 53	124. 14. 27	125. 45. 38	126. 16. 26	127. 46. 51	128. 16. 55	129. 47. 26	130. 78. 11	131. 8. 26	132. 38. 14	133. 68. 14	134. 98. 14	135. 128. 19

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	14	73.47.48	75.19.30	76.51.20	78.23.20	79.55.28	81.27.45	83.0.13	84.32.50
	15	86.5.38	87.38.35	89.11.44	90.45.4	92.18.35	93.52.18	95.26.13	97.0.21
	16	98.34.41							
α Aquilæ.	16	50.15.34	51.30.48	52.46.57	54.3.57	55.21.48	56.40.26	57.59.50	59.19.56
	17	60.40.46	62.2.14	63.24.18	64.46.57	66.10.14	67.34.4	68.58.25	70.23.18
	18	71.48.42	73.14.35	74.40.55	76.7.43	77.34.59	79.2.39	80.30.44	81.59.13
α Pegasi.	19	83.28.4							
	19	35.43.16	37.14.59	38.47.37	40.21.9	41.55.33	43.30.46	45.6.44	46.43.27
	20	48.20.53	49.58.56	51.37.36	53.16.52	54.56.45	56.37.9	58.18.5	59.59.32
α Arietis.	21	61.41.30	63.23.56	65.6.51	66.50.12	68.33.59			
	21	-	-	-	-	25.1.21	26.47.29	28.34.9	30.21.20
	22	32.8.58	33.57.5	35.45.36	37.34.31	39.23.50	41.13.29	43.3.27	44.53.44
The Sun.	23	46.44.19	48.35.10	50.26.15	52.17.34	54.9.7	56.0.51	57.52.45	59.44.47
	24	61.37.0	63.29.19	65.21.45	67.14.16	69.6.50			
	28	-	-	-	-	37.28.3	39.6.6	40.43.43	42.20.55
	29	43.57.41	45.34.1	47.9.56	48.45.25	50.20.29	51.55.6	53.29.18	55.3.4
	30	56.36.25	58.9.20	59.41.50	61.13.55	62.45.36	64.16.52	65.47.44	67.18.13
	31	68.48.18	70.18.0	71.47.20	73.16.19	74.44.55	76.13.10	77.41.5	79.8.40
	A.1	80.35.55							

CONFIGURATIONS of the SATELLITES of JUPITER  
at Half an Hour past IX o'Clock in the *Evening*.

1		2.	○	.3	1.		4.
2		.2	.1	○		.3	4.
3	1 ●		○		4.	.2	3.
4	2 ● 4 ○		○	.1	3.		
5		4.	.2	3.	1.	○	
6		4.	3.		○	.2	.1
7	4.		.3	.1	○	2.	
8	4.		2.	○	1.		3. ○
9	.4		.2	.1	○	.3	
10	.4		○	1.	.2	3.	
11	1. ○	.4	○	2.	3.		
12		2.	1 ○ 3 .4	○			
13	2. ○	3.	○	.1	.4		
14		.3	1.	○	2.	.4	
15		2.	.3	○	1.		.4
16		.2	.1	○	.3		.4
17			○	1.	.2	3.	4.
18	1. ○		○	2.	3.	4.	
19	3 ●	2.	1	○		4.	
20	2 ○	3.	○	.1	4.		
21		.3	1. 4.	○	2.		
22		4.	.3	○	.1		
23		4.	.2	.1	○	.3	
24	4.		○	1.	.2	.3	
25	.4		.1	○	2.	3.	
26	1 ● .4	2.	○				3 ●
27		.4	3.	.2	○	.1	
28		.3	.4	1.	○	.2	
29	2 ● 4 ○		.3	○	.1		
30		.2	.1	○	.3	.4	
31			○	1.	.2	.3	.4

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H.M.	
			☾ First Quarter - - -	1. 19. 39
			○ Full Moon - - - -	9. 23. 51
			☾ Last Quarter - - - -	17. 10. 23
			● New Moon - - - -	24. 2. 36
			☾ First Quarter - - -	31. 11. 59
			Other Phenomena.	
			D. H.M.	
Th.	1	Lammas Day.	1. - - ☿ α ♏, * 43' S.	
F.	2		1. - - ☿ ♀, ♀ 21' N.	
Sa.	3		3. 22. 26 ☾ σ ♍	
Sun.	4	8th Sunday after Trinity.	4. 2. 24 ☾ α ♍	
M.	5		5. 1. 59 ☾ θ Ophiuchi.	
Tu.	6		6. 7. 22 <sup>1</sup> / <sub>2</sub> I. of λ ♏, * 1 <sup>1</sup> / <sub>2</sub> S. of ☾'s C	
W.	7	Prs. Amelia born. Name	6. 8. 45 <sup>1</sup> / <sub>2</sub> E.	
Th.	8	[of Jesus.	11. 1. 31 ☾ θ ♏	
F.	9		13. - - ♀ χ ♏, * 3' S.	
Sa.	10	St. Lawrence.	15. 5. 0 ☾ η ♏	
Sun.	11	9th Sun. after Tr. Prs. of	16. - - ♀ σ ♏, * 22' N.	
M.	12	P. of Wales b. [Brunsw. b.	17. 15. 13 ☾ η Pleiadum.	
Tu.	13		19. 10. 19 ☾ 125 ♄	
W.	14		19. 12. 23 I. of 132 ♄, * 0 <sup>1</sup> / <sub>4</sub> S. of ☾'s C	
Th.	15	Assumption.	19. 13. 13 <sup>3</sup> / <sub>4</sub> E.	
F.	16	Duke of York born.	20. 10. 23 ☾ ε ♏	
Sa.	17		21. 0. 31 ☾ δ ♏	
Sun.	18	10th Sunday after Trinity	22. - - ♀ λ ♏, * 33' S.	
M.	19		23. 4. 4 ☾ enters ♏	
Tu.	20		23. - - ♀ β ♏, * 28' S.	
W.	21	Duke of Clarence born.	28. - - ♂ η ♏, ♂ 30 <sup>1</sup> / <sub>2</sub> S.	
Th.	22		29. - - ♀ η ♏, * 24' N.	
F.	23		31. 6. 4 ☾ σ ♍	
Sa.	24	St. Bartholomew.	31. 9. 59 ☾ α ♍	
Sun.	25	11th Sunday after Trinity.		
M.	26			
Tu.	27			
W.	28	St. Augustine.		
Th.	29	St. John Bap. beheaded.		
F.	30			
Sa.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	4. 8. 42. 6	8. 44. 32, 3	18. 6. 14	5. 56, 4	
F.	2	4. 9. 39. 33	8. 48. 25, 3	17. 51. 3	5. 52, 9	3, 5
Sa.	3	4. 10. 37. 1	8. 52. 17, 7	17. 35. 34	5. 48, 7	4, 2
Sun.	4	4. 11. 34. 29	8. 56. 9, 4	17. 19. 47	5. 43, 9	4, 8
M.	5	4. 12. 31. 58	9. 0. 0, 6	17. 3. 45	5. 38, 4	5, 5
						6, 0
Tu.	6	4. 13. 29. 28	9. 3. 51, 1	16. 47. 25	5. 32, 4	
W.	7	4. 14. 26. 59	9. 7. 41, 0	16. 30. 49	5. 25, 8	6, 6
Th.	8	4. 15. 24. 30	9. 11. 30, 3	16. 13. 58	5. 18, 6	7, 2
F.	9	4. 16. 22. 3	9. 15. 19, 0	15. 56. 50	5. 10, 7	7, 9
Sa.	10	4. 17. 19. 37	9. 19. 7, 1	15. 39. 28	5. 2, 3	8, 4
						9, 0
Sun.	11	4. 18. 17. 12	9. 22. 54, 7	15. 21. 50	4. 53, 3	
M.	12	4. 19. 14. 48	9. 26. 41, 7	15. 3. 58	4. 43, 8	9, 5
Tu.	13	4. 20. 12. 25	9. 30. 28, 1	14. 45. 51	4. 33, 7	10, 1
W.	14	4. 21. 10. 4	9. 34. 14, 0	14. 27. 29	4. 23, 1	10, 6
Th.	15	4. 22. 7. 45	9. 37. 59, 4	14. 8. 54	4. 12, 0	11, 1
						11, 6
F.	16	4. 23. 5. 27	9. 41. 44, 3	13. 50. 5	4. 0, 4	
Sa.	17	4. 24. 3. 11	9. 45. 28, 7	13. 31. 3	3. 48, 2	12, 2
Sun.	18	4. 25. 0. 56	9. 49. 12, 5	13. 11. 48	3. 35, 6	12, 6
M.	19	4. 25. 58. 44	9. 52. 55, 9	12. 52. 20	3. 22, 4	13, 2
Tu.	20	4. 26. 56. 33	9. 56. 38, 9	12. 32. 40	3. 8, 8	13, 6
						14, 0
W.	21	4. 27. 54. 23	10. 0. 21, 4	12. 12. 48	2. 54, 8	
Th.	22	4. 28. 52. 10	10. 4. 3, 4	11. 52. 44	2. 40, 3	14, 5
F.	23	4. 29. 50. 10	10. 7. 44, 9	11. 32. 29	2. 25, 4	14, 9
Sa.	24	5. 0. 48. 5	10. 11. 26, 1	11. 12. 2	2. 10, 0	15, 4
Sun.	25	5. 1. 46. 2	10. 15. 6, 8	10. 51. 25	1. 54, 2	15, 8
						16, 2
M.	26	5. 2. 44. 1	10. 18. 47, 1	10. 30. 38	1. 38, 0	
Tu.	27	5. 3. 42. 1	10. 22. 27, 0	10. 9. 40	1. 21, 4	16, 6
W.	28	5. 4. 40. 3	10. 26. 6, 5	9. 48. 33	1. 4, 4	17, 0
Th.	29	5. 5. 38. 6	10. 29. 45, 7	9. 27. 17	0. 47, 0	17, 4
F.	30	5. 6. 36. 10	10. 33. 24, 4	9. 5. 51	0. 29, 3	17, 7
						18, 1
Sa.	31	5. 7. 34. 16	10. 37. 2, 8	8. 44. 17	0. 11, 2	

Days	Time of ☉'s pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 5	15. 47, 5	2. 23, 6	0. 006299	9. 15. 19
7	1. 5, 9	15. 48, 4	2. 23, 9	0. 005888	9. 15. 0
13	1. 5, 5	15. 49, 4	2. 24, 2	0. 005433	9. 14. 41
19	1. 5, 0	15. 50, 5	2. 24, 5	0. 004940	9. 14. 22
25	1. 4, 6	15. 51, 7	2. 24, 9	0. 004385	9. 14. 3

## ECLIPSES of the SATELLITES of JUPITER. MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	13. 29. 2	2	0. 21. 41	2	15. 7. 59 Im.
4	7. 57. 51	5	13. 39. 35	2	17. 28. 9 E.
6	2. 26. 36	9	2. 57. 42	9	19. 7. 13 Im.
7	20. 55. 25	12	16. 15. 40	9	21. 28. 19 E.
9	15. 24. 10	16	5. 33. 54	16	23. 6. 33 Im.
11	9. 52. 59	19	18. 51. 56	17	1. 28. 35 E.
13	4. 21. 45	*23	8. 10. 17	24	3. 5. 21 Im.
14	22. 50. 33	26	21. 28. 22	24	5. 28. 16 E.
16	17. 19. 18	30	10. 46. 48	31	7. 4. 6 Im.
18	11. 48. 6			31	9. 27. 55 E.
20	6. 16. 51				
22	0. 45. 39				
23	19. 14. 23				
25	13. 43. 11				
*27	8. 11. 55				
29	2. 40. 43				
30	21. 9. 27				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
☿ MERCURY. Gr. Elong. 25°.							
1	6. 14. 43	3. 39 N	4. 26. 23	1. 13 N	13. 53 N	1. 12	
4	6. 24. 51	2. 32	5. 1. 22	0. 54	11. 50	1. 19	
7	7. 4. 21	1. 25	5. 6. 6	0. 32	9. 47	1. 25	
10	7. 13. 23	0. 19 N	5. 10. 35	0. 8 N	7. 43	1. 29	
13	7. 22. 3	0. 44 S	5. 14. 50	0. 19 S	5. 41	1. 33	
16	8. 0. 28	1. 45	5. 18. 49	0. 46	3. 43	1. 36	
19	8. 8. 45	2. 43	5. 22. 32	1. 15	1. 49	1. 38	
22	8. 16. 59	3. 37	5. 25. 57	1. 44	0. 2 N	1. 39	
25	8. 25. 16	4. 27	5. 28. 59	2. 13	1. 38 S	1. 38	
28	9. 3. 41	5. 11	6. 1. 38	2. 42	3. 7	1. 35	
31	9. 12. 20	5. 50	6. 3. 46	3. 9	4. 23	1. 32	
♀ VENUS. □ 20°. 161 <sup>h</sup> .							
1	5. 22. 33	3. 22 N	4. 26. 42	1. 30 N	14. 2 N	1. 13	
7	6. 2. 16	3. 14	5. 4. 3	1. 28	11. 24	1. 18	
13	6. 11. 57	3. 1	5. 11. 24	1. 24	8. 35	1. 23	
19	6. 21. 38	2. 43	5. 18. 44	1. 17	5. 38	1. 28	
25	7. 1. 16	2. 21	5. 26. 5	1. 7	2. 35	1. 32	
♂ MARS. □ 20°. 161 <sup>h</sup> .							
1	7. 1. 41	0. 31 N	6. 1. 11	0. 25 N	0. 5 S	3. 20	
7	7. 4. 35	0. 26	6. 4. 55	0. 20	1. 39	3. 11	
13	7. 7. 30	0. 20	6. 8. 41	0. 16	3. 12	3. 2	
19	7. 10. 27	0. 15	6. 12. 30	0. 11	4. 46	2. 53	
25	7. 13. 26	0. 9	6. 16. 22	0. 7	6. 20	2. 45	
♃ JUPITER. □ 20°. 161 <sup>h</sup> .							
1	8. 6. 58	0. 41 N	7. 26. 34	0. 45 N	18. 41 S	6. 52	
7	8. 7. 27	0. 41	7. 26. 45	0. 43	18. 45	6. 30	
13	8. 7. 55	0. 40	7. 27. 3	0. 42	18. 51	6. 8	
19	8. 8. 23	0. 40	7. 27. 27	0. 40	18. 57	5. 48	
25	8. 8. 52	0. 39	7. 27. 58	0. 39	19. 5	5. 28	
♄ SATURN. □ 20°. 161 <sup>h</sup> .							
1	6. 16. 48	2. 29 N	6. 11. 27	2. 23 N	2. 20 S	4. 1	
7	6. 17. 0	2. 29	6. 11. 56	2. 22	2. 33	3. 39	
13	6. 17. 12	2. 29	6. 12. 27	2. 21	2. 46	3. 19	
19	6. 17. 23	2. 29	6. 13. 0	2. 20	3. 0	2. 58	
25	6. 17. 35	2. 29	6. 13. 34	2. 19	3. 14	2. 38	
♅ GEORGIAN. □ 20°. 161 <sup>h</sup> .							
1	6. 20. 22	0. 37 N	6. 17. 26	0. 36 N	6. 18 S	4. 20	
11	6. 20. 30	0. 37	6. 17. 47	0. 36	6. 26	3. 43	
21	6. 20. 38	0. 37	6. 18. 12	0. 35	6. 36	3. 7	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Th.	1	6. 29. 15. 44		7. 5. 31. 46		5. 7. 42 S		4. 58. 12 S	
F.	2	7. 11. 43. 5		7. 17. 50. 12		4. 45. 19		4. 29. 19	
Sa.	3	7. 23. 53. 37		7. 29. 54. 1		4. 10. 27		3. 48. 58	
Sun.	4	8. 5. 51. 59		8. 11. 48. 3		3. 25. 11		2. 59. 17	
M.	5	8. 17. 42. 51		8. 23. 36. 53		2. 31. 34		2. 2. 18	
Tu.	6	8. 29. 30. 41		9. 5. 24. 45		1. 31. 45		1. 0. 14 S	
W.	7	9. 11. 19. 31		9. 17. 15. 26		0. 28. 0 S		0. 4. 36 N	
Th.	8	9. 23. 12. 51		9. 29. 12. 9		0. 37. 14 N		1. 9. 38	
F.	9	10. 5. 13. 36		10. 11. 17. 27		1. 41. 23		2. 12. 11	
Sa.	10	10. 17. 23. 56		10. 23. 33. 12		2. 41. 39		3. 9. 25	
Sun.	11	10. 29. 45. 24		11. 6. 0. 40		3. 35. 9		3. 58. 30	
M.	12	11. 12. 19. 4		11. 18. 40. 41		4. 19. 7		4. 36. 42	
Tu.	13	11. 25. 5. 35		0. 1. 33. 49		4. 50. 57		5. 1. 37	
W.	14	0. 8. 5. 25		0. 14. 40. 28		5. 8. 28		5. 11. 20	
Th.	15	0. 21. 18. 58		0. 28. 0. 58		5. 10. 3		5. 4. 33	
F.	16	1. 4. 46. 30		1. 11. 35. 38		4. 54. 47		4. 40. 47	
Sa.	17	1. 18. 28. 21		1. 25. 24. 39		4. 22. 38		4. 9. 30	
Sun.	18	2. 2. 24. 29		2. 9. 27. 50		3. 34. 36		3. 5. 13	
M.	19	2. 16. 34. 30		2. 23. 44. 21		2. 32. 45		1. 57. 39	
Tu.	20	3. 0. 57. 6		3. 8. 12. 25		1. 20. 27		0. 41. 45 N	
W.	21	3. 15. 29. 47		3. 22. 48. 41		0. 2. 13 N		0. 37. 28 S	
Th.	22	4. 0. 8. 24		4. 7. 28. 15		1. 16. 33 S		1. 54. 21	
F.	23	4. 14. 47. 24		4. 22. 5. 0		2. 30. 9		3. 3. 19	
Sa.	24	4. 29. 20. 12		5. 6. 32. 8		3. 33. 16		3. 59. 35	
Sun.	25	5. 13. 40. 4		5. 20. 43. 16		4. 21. 51		4. 39. 51	
M.	26	5. 27. 41. 13		6. 4. 33. 26		4. 53. 26		5. 2. 33	
Tu.	27	6. 11. 19. 39		6. 17. 59. 44		5. 7. 17		5. 7. 44	
W.	28	6. 24. 33. 40		7. 1. 1. 36		5. 4. 6		4. 56. 36	
Th.	29	7. 7. 23. 48		7. 13. 40. 36		4. 45. 31		4. 31. 7	
F.	30	7. 19. 52. 27		7. 25. 59. 53		4. 13. 42		3. 53. 34	
Sa.	31	8. 2. 3. 29		8. 8. 3. 50		3. 30. 58		3. 6. 15	



Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
Th.	1	8	5. 6	205. 19	211. 29	16. 1 S	18. 3 S
F.	2	9	5. 54	217. 43	224. 1	19. 53	21. 28
Sa.	3	10	6. 43	230. 23	236. 49	22. 48	23. 52
Sun.	4	11	7. 32	243. 19	249. 50	24. 40	25. 11
M.	5	12	8. 22	256. 23	262. 56	25. 25	25. 21
Tu.	6	13	9. 12	269. 27	275. 56	25. 0	24. 22
W.	7	14	10. 1	282. 22	288. 42	23. 27	22. 16
Th.	8	15	10. 49	294. 57	301. 6	20. 51	19. 12
F.	9	16	11. 34	307. 9	313. 7	17. 21	15. 17
Sa.	10	17	12. 19	319. 1	324. 50	13. 4	10. 42
Sun.	11	18	13. 2	330. 35	336. 19	8. 13	5. 38
M.	12	19	13. 46	342. 3	347. 47	2. 57 S	0. 14 S
Tu.	13	20	14. 30	353. 34	359. 26	2. 30 N	5. 14 N
W.	14	21	15. 16	5. 23	11. 28	7. 56	10. 34
Th.	15	22	16. 5	17. 42	24. 8	13. 6	15. 31
F.	16	23	16. 58	30. 46	37. 37	17. 45	19. 46
Sa.	17	24	17. 54	44. 42	52. 1	21. 33	23. 1
Sun.	18	25	18. 55	59. 33	67. 16	24. 10	24. 57
M.	19	26	19. 57	75. 8	83. 5	25. 19	25. 16
Tu.	20	27	20. 59	91. 3	98. 59	24. 48	23. 54
W.	21	28	21. 59	106. 49	114. 31	22. 36	20. 55
Th.	22	29	22. 56	122. 3	129. 23	18. 54	16. 34
F.	23	30	23. 49	136. 30	143. 27	14. 1	11. 16
Sa.	24	1	0	150. 12	156. 48	8. 23	5. 25 N
Sun.	25	2	0. 39	163. 16	169. 38	2. 24 N	0. 36 S
M.	26	3	1. 28	175. 56	182. 10	3. 34 S	6. 26
Tu.	27	4	2. 15	188. 23	194. 36	9. 12	11. 48
W.	28	5	3. 3	200. 50	207. 6	14. 14	16. 28
Th.	29	6	3. 51	213. 24	219. 46	18. 29	20. 16
F.	30	7	4. 41	226. 12	232. 40	21. 48	23. 3
Sa.	31	8	5. 31	239. 12	245. 45	24. 2	24. 44

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Th.	1	15. 16	15. 11	56. 3	55. 43	5067	5093
F.	2	15. 6	15. 1	55. 23	55. 5	5119	5142
Sa.	3	14. 57	14. 54	54. 51	54. 39	5161	5177
Sun.	4	14. 51	14. 49	54. 29	54. 22	5190	5199
M.	5	14. 48	14. 47	54. 17	54. 15	5206	5209
Tu.	6	14. 47	14. 47	54. 14	54. 15	5210	5209
W.	7	14. 48	14. 49	54. 18	54. 23	5205	5198
Th.	8	14. 51	14. 52	54. 28	54. 35	5191	5182
F.	9	14. 55	14. 58	54. 44	54. 54	5170	5157
Sa.	10	15. 1	15. 4	55. 5	55. 17	5142	5127
Sun.	11	15. 7	15. 11	55. 30	55. 43	5110	5093
M.	12	15. 15	15. 19	55. 57	56. 11	5075	5056
Tu.	13	15. 23	15. 27	56. 26	56. 42	5037	5017
W.	14	15. 31	15. 36	56. 58	57. 14	4996	4976
Th.	15	15. 40	15. 45	57. 31	57. 48	4955	4933
F.	16	15. 50	15. 54	58. 5	58. 22	4912	4891
Sa.	17	15. 59	16. 4	58. 39	58. 56	4870	4849
Sun.	18	16. 8	16. 12	59. 12	59. 28	4830	4810
M.	19	16. 16	16. 20	59. 43	59. 56	4792	4776
Tu.	20	16. 23	16. 25	60. 7	60. 16	4763	4752
W.	21	16. 27	16. 28	60. 22	60. 25	4745	4741
Th.	22	16. 28	16. 27	60. 25	60. 22	4741	4745
F.	23	16. 25	16. 22	60. 14	60. 4	4754	4766
Sa.	24	16. 18	16. 14	59. 50	59. 33	4783	4804
Sun.	25	16. 8	16. 3	59. 14	58. 53	4827	4853
M.	26	15. 56	15. 50	58. 30	58. 5	4881	4912
Tu.	27	15. 43	15. 36	57. 40	57. 15	4943	4975
W.	28	15. 29	15. 23	56. 50	56. 27	5006	5036
Th.	29	15. 17	15. 11	56. 4	55. 44	5065	5091
F.	30	15. 6	15. 1	55. 25	55. 8	5116	5138
Sa.	31	14. 58	14. 55	54. 54	54. 43	5157	5171

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	1	37.	39. 31	36.	5. 26	34.	31. 41	32.	58. 13	31.	25. 4	29.	52. 12	28.	19. 36	26.	47. 17
	2	25.	15. 14														
α Aquilæ.	2	81.	21. 29	80.	0. 39	78.	40. 8	77.	19. 55	76.	0. 2	74.	40. 28	73.	21. 15	72.	2. 22
	3	70.	43. 49	69.	25. 36	68.	7. 47	66.	50. 19	65.	33. 15	64.	16. 35	63.	0. 19	61.	44. 30
	4	60.	29. 6														
Fomalhaut.	4	84.	21. 16	83.	0. 20	81.	39. 33	80.	18. 53	78.	58. 21	77.	37. 57	76.	17. 42	74.	57. 36
	5	73.	37. 39	72.	17. 51	70.	58. 12	69.	38. 45	68.	19. 27	67.	0. 21	65.	41. 26	64.	22. 44
	6	63.	4. 14														
α Pegasi.	6	82.	17. 26	80.	51. 37	79.	25. 46	77.	59. 55	76.	34. 3	75.	8. 10	73.	42. 16	72.	16. 22
	7	70.	50. 29	69.	24. 33	67.	58. 36	66.	32. 40	65.	6. 42	63.	40. 44	62.	14. 46	60.	48. 49
	8	59.	22. 52	57.	56. 54	56.	30. 59	55.	5. 5	53.	39. 14	52.	13. 25	50.	47. 41	49.	22. 4
α Arctici.	9	47.	56. 31	46.	31. 7	45.	5. 51	43.	40. 46	42.	15. 51						
	9	-	-	-	-	-	-	-	-	83.	22. 30	81.	51. 16	80.	19. 52	78.	48. 20
	10	77.	16. 38	75.	44. 47	74.	12. 47	72.	40. 38	71.	8. 20	69.	35. 52	68.	3. 15	66.	30. 29
	11	64.	57. 33	63.	24. 27	61.	51. 12	60.	17. 48	58.	44. 14	57.	10. 31	55.	36. 38	54.	2. 36
Aldebaran.	12	52.	28. 25														
	12	85.	12. 35	83.	38. 46	82.	4. 46	80.	30. 36	78.	56. 15	77.	21. 43	75.	47. 2	74.	12. 10
	13	72.	37. 8	71.	1. 56	69.	26. 33	67.	51. 1	66.	15. 19	64.	39. 27	63.	3. 25	61.	27. 14
	14	59.	50. 54	58.	14. 23	56.	37. 44	55.	0. 56	53.	24. 0	51.	46. 55	50.	9. 43	48.	32. 24

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	15	46. 54. 58	45. 17. 25	43. 39. 48	42. 2. 7	40. 24. 22	38. 46. 36	37. 8. 49	35. 31. 3
	16	33. 53. 17							
Pollux.	16	75. 19. 52	73. 39. 4	71. 58. 3	70. 16. 49	68. 35. 21	66. 53. 40	65. 11. 47	63. 29. 40
	17	61. 47. 21	60. 4. 48	58. 22. 3	56. 39. 6	54. 55. 56			
The Sun.	15	120. 40. 28	119. 8. 3	117. 35. 25	116. 2. 33	114. 29. 28	112. 56. 9	111. 22. 35	109. 48. 48
	16	108. 14. 46	106. 40. 30	105. 5. 59	103. 31. 15	101. 56. 15	100. 21. 1	98. 45. 32	97. 9. 49
	17	95. 33. 51	93. 57. 38	92. 21. 11	90. 44. 29	89. 7. 32	87. 30. 21	85. 52. 55	84. 15. 14
	18	82. 37. 19	80. 59. 9	79. 20. 45	77. 42. 7	76. 3. 15	74. 24. 9	72. 44. 49	71. 5. 16
	19	69. 25. 30	67. 45. 31	66. 5. 19	64. 24. 55	62. 44. 19	61. 3. 31	59. 22. 33	57. 41. 24
	20	56. 0. 5	54. 18. 35	52. 36. 57	50. 55. 11	49. 13. 16	47. 31. 14	45. 49. 7	44. 6. 55
	21	42. 24. 37	40. 42. 15	38. 59. 51	37. 17. 24	35. 34. 55			
	25	- - -	- - -	- - -	- - -	76. 2. 36	74. 17. 54	72. 33. 34	70. 49. 36
	26	69. 6. 0	67. 22. 47	65. 39. 56	63. 57. 28	62. 15. 23	60. 33. 41	58. 52. 22	57. 11. 26
	27	55. 30. 53	53. 50. 44	52. 10. 58	50. 31. 35	48. 52. 35	47. 13. 58	45. 35. 44	43. 57. 53
Antares.	28	42. 20. 24	40. 43. 18	39. 6. 33	37. 30. 10	35. 54. 9	34. 18. 29	32. 43. 9	31. 8. 10
	29	29. 33. 32							
	29	85. 4. 38	83. 41. 21	82. 18. 24	80. 55. 49	79. 33. 34	78. 11. 41	76. 50. 10	75. 29. 2
α Aquilæ.	30	74. 8. 17	72. 47. 54	71. 27. 57	70. 8. 23	68. 49. 15	67. 30. 32	66. 12. 16	64. 54. 27
	31	63. 37. 6							
Fomalhaut.	31	87. 52. 18	86. 30. 14	85. 8. 21	83. 46. 39	82. 25. 8	81. 3. 48	79. 42. 40	78. 21. 42
	31	77. 0. 57							

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
The Sun.	1	80. 35. 55	82. 2. 50	83. 29. 27	84. 55. 45	86. 21. 46	87. 47. 30	89. 12. 58	90. 38. 10								
	2	92. 3. 6	93. 27. 48	94. 52. 15	96. 16. 29	97. 40. 29	99. 4. 16	100. 27. 52	101. 51. 16								
	3	103. 14. 28	104. 37. 30	106. 0. 23	107. 23. 6	108. 45. 40	110. 8. 7	111. 30. 26	112. 52. 39								
	4	114. 14. 44	115. 36. 43	116. 58. 36	118. 20. 25	119. 42. 9	121. 3. 49										
Spica $\pi$ —	2	20. 43. 33	22. 14. 26	23. 45. 10	25. 15. 46	26. 46. 14	28. 16. 34	29. 46. 45	31. 16. 49								
	3	32. 46. 45	34. 16. 33	35. 46. 14	37. 15. 49	38. 45. 16	40. 14. 36	41. 43. 51	43. 13. 0								
	4	44. 42. 3	46. 11. 0	47. 39. 53	49. 8. 43	50. 37. 28	52. 6. 11	53. 34. 51	55. 3. 29								
	5	56. 32. 5	58. 0. 39	59. 29. 13	60. 57. 46	62. 26. 18	63. 54. 55	65. 23. 24	66. 51. 58								
	6	68. 20. 34															
	6	22. 37. 23	24. 6. 3	25. 34. 45	27. 3. 32	28. 32. 20	30. 1. 12	31. 30. 8	32. 59. 9								
Antares.	7	34. 28. 14	35. 57. 24	37. 26. 39	38. 55. 59	40. 25. 25	41. 54. 56	43. 24. 34	44. 54. 18								
	8	46. 24. 9	47. 54. 6	49. 24. 11	50. 54. 23	52. 24. 43	53. 55. 10	55. 25. 45	56. 56. 28								
	9	58. 27. 19	59. 58. 19	61. 29. 27	63. 0. 44	64. 32. 9	66. 3. 43	67. 35. 27	69. 7. 20								
	10	70. 39. 23	72. 11. 35	73. 43. 56	75. 16. 27	76. 49. 7	78. 21. 57	79. 54. 57	81. 28. 8								
	11	83. 1. 28	84. 34. 59	86. 8. 40	87. 42. 32	89. 16. 33	90. 50. 45	92. 25. 8	93. 59. 42								
	12	95. 34. 26															
$\alpha$ Aquilæ.	12	47. 56. 40	49. 10. 40	50. 25. 40	51. 41. 36	52. 58. 26	54. 16. 9	55. 34. 37	56. 53. 52								
	13	58. 13. 52	59. 34. 30	60. 55. 44	62. 17. 35	63. 40. 3	65. 3. 2	66. 26. 31	67. 50. 31								
	14	69. 15. 0	70. 39. 55	72. 5. 15	73. 30. 59	74. 57. 8	76. 23. 38	77. 50. 30	79. 17. 41								
	15	80. 45. 10															
	15																

Stars Names.	Days	Noon.	III <sup>h</sup> .	V <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	15	32. 57. 39	34. 26. 27	35. 56. 13	37. 26. 55	38. 58. 28	40. 30. 52	42. 3. 59	43. 37. 49
	16	45. 12. 21	46. 47. 27	48. 23. 5	49. 59. 16	51. 36. 0	53. 13. 11	54. 50. 50	56. 28. 55
	17	58. 7. 28	59. 46. 25	61. 25. 44	63. 5. 25	64. 45. 29			
α Arietis.	17	-	-	-	-	21. 9. 12	22. 50. 54	24. 33. 8	26. 15. 55
	18	27. 59. 12	29. 42. 58	31. 27. 9	33. 11. 44	34. 56. 43	36. 42. 1	38. 27. 37	40. 13. 32
	19	41. 59. 46	43. 46. 17	45. 33. 3	47. 20. 6	49. 7. 24	50. 54. 57	52. 42. 42	54. 30. 41
	20	56. 18. 53							
Aldebaran.	20	24. 48. 4	26. 30. 18	28. 13. 21	29. 57. 10	31. 41. 40	33. 26. 49	35. 12. 28	36. 58. 37
	21	38. 45. 15	40. 32. 10	42. 19. 22	44. 6. 51	45. 54. 36	47. 42. 30	49. 30. 33	51. 18. 46
	22	53. 7. 6	54. 55. 32	56. 44. 1	58. 32. 32	60. 21. 6	62. 9. 41	63. 58. 11	65. 46. 39
	23	67. 35. 5							
The Sun.	27	37. 55. 23	39. 27. 50	40. 59. 55	42. 31. 39	44. 3. 1	45. 34. 2	47. 4. 41	48. 34. 59
	28	50. 4. 56	51. 34. 31	53. 3. 45	54. 32. 38	56. 1. 11	57. 29. 24	58. 57. 17	60. 24. 50
	29	61. 52. 4	63. 18. 58	64. 45. 35	66. 11. 53	67. 37. 53	69. 3. 36	70. 29. 2	71. 54. 12
	30	73. 19. 6	74. 43. 44	76. 8. 9	77. 32. 18	78. 56. 14	80. 19. 56	81. 43. 26	83. 6. 43
	31	84. 29. 49	85. 52. 44	87. 15. 29	88. 38. 5	90. 0. 31	91. 22. 48	92. 44. 57	94. 6. 58
	S. 1	95. 28. 53							
Spica ♀	31	40. 54. 7	42. 24. 10	43. 54. 6	45. 23. 54	46. 53. 35	48. 23. 8	49. 52. 34	51. 21. 52
	S. 1	52. 51. 3							

CONFIGURATIONS of the SATELLITES of JUPITER  
at half an hour past VIII. o'Clock in the *Evening*.

1				.1	○		2.	3.		.4
2				2.	○	1 6 3				.4
3	1.○			3.	.2	○				4.
4			.3		1.	○		.2		4.
5			.3			○	2.	.1		4.
6			.2	1.		○	4.	.3		
7			4.			○	.2	1.	.3	
8			4.		.1	○		2.	3.	
9		4.		2.		○	1 6 3			
10	4.		3.	.2	.1	○				
11	.4		3.			○		.2		1 ●
12	.4		.3			○	.1			
13		.4	2.	1.		○	.3			
14	2.○		.4			○	.1	.3		
15			.1			○	.4	2.	3.	
16			2.			○	1 6 3		.4	
17			3.	.2	.1	○				.4
18	1 ●		3.			○		.2		.4
19			.3			○	.1	2.		4.
20	3.○		2.	1.		○				4.
21	2.○					○	.1	.3		4.
22			1.			○	2 6 4	3.		
23	4 6			2.		○	1.	3.		
24			4.	.1	.1	○				
25			4.	3.		○	1.	.2		
26		4.				○		2.		1.○
27	4.		2.	.3	1.	○				
28	.4			.2		○	.1	.3		
29	.4		1.			○		.3	3.	
30	2 ●		.4			○	1.	3.		
31	3 ●			.2	1 6 4	○				

# I. SEPTEMBER 1805. 97

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M. ○ Full Moon ----- 8. 13. 37 ☾ Last Quarter --- 15. 16. 34 ● New Moon ----- 22. 12. 49 ☽ First Quarter --- 30. 7. 2
Sun. M. Tu. W. Th. F. Sa.	1 2 3 4 5 6 7	12th Sun. aft. Tr. Giles. London burnt 1666, O.S.	Other Phenomena.
			D. H. M. 1. 9. 26 ☽ θ Ophiuchi. 2. 15. 46 ☽ λ ♄ 3. 9. 23 ☽ ο ♄ 7. - - ♄ Stationary. 7. 8. 4 I. of θ $\frac{1}{2}$ S. of D's C. 7. 9. 16 E. of θ $\frac{1}{2}$ S. of D's C. 11. 10. 50 ☽ η ♂ 11. - - ♄ θ η, * 31' S. 13. - - ♄ ♂, ♄ 11' $\frac{1}{2}$ S. 13. 20. 46 ☽ η Pleiadum. 15. - - ♄ β η, * 28' N. 15. 16. 24 ☽ 125 ♄ 15. 19. 55 ☽ 132 ♄ 16. 17. 3 ☽ ζ η 17. 7. 35 ☽ δ η [appulse. 19. 15. 27 ☽ ξ Ω, A very near 19. 19. 51 ☽ ο Ω 20. - - ♂ λ η, * 43' N. 23. 0. 36 ☾ enters ♄ 25. - - ♄ λ η, * 43' N. 27. 14. 30 ☽ σ η 27. 18. 23 ☽ α η 28. 17. 38 ☽ θ Ophiuchi. 28. 19. 31 ☽ β Ophiuchi. 29. 23. 52 ☽ λ ♄ 30. - - ♄ Stationary. 30. 17. 30 ☽ ο ♄
Sun. M. Tu. W. Th. F. Sa.	8 9 10 11 12 13 14	13th Su. aft. Tr. Nat. of [B. V. Mary.	Enurchus.
Sun. M. Tu. W. Th. F. Sa.	15 16 17 18 19 20 21	14th Sun. after Trinity. Lambert.	Holy Cross.
Sun. M. Tu. W. Th. F. Sa.	22 23 24 25 26 27 28	15th Sun. af. Tr. K. Geo. [III. crown'd.	St. Matthew.
Sun. M.	29 30	16th Su. aft. Tr. St. Mich. St. Jerome. [Prs. Royal b	St. Cyprian.



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	5. 8. 32. 23	10. 40. 41, 0	8. 22. 35	0. 7, 2	18, 8
M.	2	5. 9. 30. 32	10. 44. 18, 7	8. 0. 45	0. 26, 0	19, 0
Tu.	3	5. 10. 28. 42	10. 47. 56, 2	7. 38. 47	0. 45, 0	19, 3
W.	4	5. 11. 26. 53	10. 51. 33, 4	7. 16. 41	1. 4, 3	19, 6
Th.	5	5. 12. 25. 6	10. 55. 10, 3	6. 54. 29	1. 23, 9	19, 9
F.	6	5. 13. 23. 20	10. 58. 47, 0	6. 32. 10	1. 43, 8	20, 0
Sa.	7	5. 14. 21. 37	11. 2. 23, 4	6. 9. 44	2. 3, 8	20, 2
Sun.	8	5. 15. 19. 55	11. 5. 59, 6	5. 47. 12	2. 24, 0	20, 5
M.	9	5. 16. 18. 14	11. 9. 35, 7	5. 24. 35	2. 44, 5	20, 6
Tu.	10	5. 17. 16. 36	11. 13. 11, 7	5. 1. 52	3. 5, 1	20, 7
W.	11	5. 18. 14. 59	11. 16. 47, 5	4. 39. 3	3. 25, 8	20, 8
Th.	12	5. 19. 13. 25	11. 20. 23, 1	4. 16. 11	3. 46, 6	20, 8
F.	13	5. 20. 11. 52	11. 23. 58, 7	3. 53. 13	4. 7, 4	21, 0
Sa.	14	5. 21. 10. 22	11. 27. 34, 2	3. 30. 11	4. 28, 4	21, 0
Sun.	15	5. 22. 8. 54	11. 31. 9, 7	3. 7. 5	4. 49, 4	21, 1
M.	16	5. 23. 7. 29	11. 34. 45, 2	2. 43. 55	5. 10, 5	21, 0
Tu.	17	5. 24. 6. 5	11. 38. 20, 7	2. 20. 43	5. 31, 5	21, 0
W.	18	5. 25. 4. 44	11. 41. 56, 2	1. 57. 27	5. 52, 5	21, 0
Th.	19	5. 26. 3. 25	11. 45. 31, 7	1. 34. 8	6. 13, 5	21, 0
F.	20	5. 27. 2. 8	11. 49. 7, 3	1. 10. 48	6. 34, 4	20, 9
Sa.	21	5. 28. 0. 54	11. 52. 43, 0	0. 47. 25	6. 55, 2	20, 8
Sun.	22	5. 28. 59. 42	11. 56. 18, 7	0. 24. 1	7. 16, 6	20, 8
M.	23	5. 29. 58. 31	11. 59. 54, 6	0. 0. 35 South.	7. 36, 6	20, 6
Tu.	24	6. 0. 57. 23	12. 3. 30, 5	0. 22. 51	7. 57. 1	20, 5
W.	25	6. 1. 56. 16	12. 7. 6, 6	0. 46. 18	8. 17, 5	20, 4
Th.	26	6. 2. 55. 12	12. 10. 42, 9	1. 9. 44	8. 37, 7	20, 2
F.	27	6. 3. 54. 10	12. 14. 19, 4	1. 33. 11	8. 57, 8	20, 1
Sa.	28	6. 4. 53. 9	12. 17. 56, 0	1. 56. 36	9. 17, 6	19, 8
Sun.	29	6. 5. 52. 11	12. 21. 32, 9	2. 20. 1	9. 37, 2	19, 6
M.	30	6. 6. 51. 13	12. 25. 10, 0	2. 43. 24	9. 56, 7	19, 5

# III. SEPTEMBER 1805. 99

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 2	15. 53. 3	2. 25. 4	0. 003652	9. 13. 40
7	1. 4. 0	15. 54. 8	2. 25. 8	0. 002979	9. 13. 21
13	1. 3. 9	15. 56. 3	2. 26. 3	0. 002295	9. 13. 2
19	1. 3. 9	15. 57. 9	2. 26. 7	0. 001593	9. 12. 43
25	1. 4. 0	15. 59. 5	2. 27. 3	0. 000860	9. 12. 24

## ECLIPSES of the SATELLITES of JUPITER. MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	15. 38. 14	3	0. 4. 56	7	11. 3. 15 Im.
3	10. 6. 58	6	13. 23. 31	7	13. 27. 57 E.
5	4. 35. 45	10	2. 41. 41	14	15. 2. 16 Im.
6	23. 4. 28	13	16. 0. 25	14	17. 28. 0 E.
8	17. 33. 15	17	5. 18. 34	21	19. 2. 9 Im.
10	12. 1. 58	20	18. 37. 22	21	21. 28. 48 E.
12	6. 30. 44	24	7. 55. 35	28	23. 1. 14 Im.
14	0. 59. 27	27	21. 14. 29	29	1. 28. 53 E.
15	19. 28. 12				
17	13. 56. 54				
19	8. 25. 39				
21	2. 54. 20				
22	21. 23. 5				
24	15. 51. 46				
26	10. 20. 30				
28	4. 49. 10				
29	23. 17. 53				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY.							
					Inf. 6 20 <sup>d</sup> . 13 <sup>h</sup> .		
1	9. 15. 18	6. 2 S	6. 4. 22	3. 17 S	4. 45 S	1. 30	
4	9. 24. 25	6. 31	6. 5. 42	3. 40	5. 38	1. 23	
7	10. 4. 3	6. 51	6. 6. 16	3. 58	6. 7	1. 14	
10	10. 14. 18	7. 0	6. 5. 56	4. 7	6. 9	1. 2	
13	10. 25. 19	6. 54	6. 4. 35	4. 6	5. 35	0. 46	
16	11. 7. 17	6. 32	6. 2. 17	3. 49	4. 25	0. 27	
19	11. 20. 20	5. 47	5. 29. 16	3. 15	2. 42	0. 6	
22	0. 4. 40	4. 38	5. 26. 2	2. 26	0. 39 S	23. 39	
25	0. 20. 21	3. 3	5. 23. 19	1. 27	1. 20 N	23. 22	
28	1. 7. 21	1. 4 S	5. 21. 45	0. 27 S	2. 52	23. 7	
30	1. 19. 20	0. 24 N	5. 21. 32	0. 10 N	3. 30	23. 1	
♀ VENUS.							
1	7. 12. 29	1. 49 N	6. 4. 38	0. 54 N	1. 1 S	1. 37	
7	7. 22. 4	1. 19	6. 11. 58	0. 40	4. 8	1. 42	
13	8. 1. 37	0. 47	6. 19. 16	0. 24	7. 11	1. 47	
19	8. 11. 9	0. 13 N	6. 26. 34	0. 7 N	10. 8	1. 53	
25	8. 20. 40	0. 20 S	7. 3. 51	0. 11 S	12. 59	1. 59	
♂ MARS.							
1	7. 16. 57	0. 2 N	6. 20. 55	0. 2 N	8. 9 S	2. 36	
7	7. 19. 59	0. 4 S	6. 24. 53	0. 3 S	9. 41	2. 29	
13	7. 23. 3	0. 10	6. 28. 53	0. 7	11. 12	2. 23	
19	7. 26. 10	0. 15	7. 2. 55	0. 11	12. 40	2. 17	
25	7. 29. 18	0. 22	7. 7. 1	0. 15	14. 6	2. 11	
♃ JUPITER.							
1	8. 9. 25	0. 38 N	7. 28. 41	0. 38 N	19. 16 S	5. 5	
7	8. 9. 54	0. 38	7. 29. 22	0. 37	19. 26	4. 46	
13	8. 10. 22	0. 37	8. 0. 9	0. 35	19. 38	4. 28	
19	8. 10. 51	0. 37	8. 1. 1	0. 34	19. 49	4. 10	
25	8. 11. 19	0. 36	8. 1. 56	0. 33	20. 2	3. 52	
♄ SATURN.							
1	6. 17. 49	2. 30 N	6. 14. 20	2. 18 N	3. 32 S	2. 15	
7	6. 18. 1	2. 30	6. 14. 59	2. 17	3. 48	1. 56	
13	6. 18. 13	2. 30	6. 15. 39	2. 17	4. 3	1. 37	
19	6. 18. 25	2. 30	6. 16. 21	2. 16	4. 20	1. 18	
25	6. 18. 36	2. 30	6. 17. 3	2. 16	4. 37	0. 59	
♅ GEORGIAN.							
1	6. 20. 46	0. 37 N	6. 18. 45	0. 35 N	6. 49 S	2. 29	
11	6. 20. 54	0. 36	6. 19. 17	0. 35	7. 1	1. 55	
21	6. 21. 1	0. 36	6. 19. 52	0. 35	7. 15	1. 21	

		THE MOON'S			
Days of the Week.	Days of the Month.	Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	8. 14. 1. 36	8. 19. 57. 26	2. 39. 40 S	2. 11. 29 S
M.	2	8. 25. 52. 1	9. 1. 45. 58	1. 42. 0	1. 11. 29
Tu.	3	9. 7. 39. 57	9. 13. 34. 37	0. 40. 13 S	0. 8. 29 S
W.	4	9. 19. 30. 31	9. 25. 28. 12	0. 23. 25 N	0. 55. 12 N
Th.	5	10. 1. 28. 11	10. 7. 30. 53	1. 26. 30	1. 57. 3
F.	6	10. 13. 36. 42	10. 19. 45. 58	2. 26. 28	2. 54. 24
Sa.	7	10. 25. 58. 55	11. 2. 15. 43	3. 20. 30	3. 44. 25
Sun.	8	11. 8. 36. 28	11. 15. 1. 11	4. 5. 46	4. 24. 13
M.	9	11. 21. 29. 47	11. 28. 2. 12	4. 39. 27	4. 51. 9
Tu.	10	0. 4. 38. 17	0. 11. 17. 47	4. 59. 4	5. 3. 1
W.	11	0. 18. 0. 30	0. 24. 46. 10	5. 2. 51	4. 58. 27
Th.	12	1. 1. 34. 29	1. 8. 25. 13	4. 49. 47	4. 36. 56
F.	13	1. 15. 18. 10	1. 22. 13. 2	4. 20. 0	3. 59. 10
Sa.	14	1. 29. 9. 43	2. 6. 8. 2	3. 34. 42	3. 6. 55
Sun.	15	2. 13. 7. 50	2. 20. 9. 3	2. 36. 14	2. 3. 4
M.	16	2. 27. 11. 34	3. 4. 15. 17	1. 27. 55	0. 51. 20 N
Tu.	17	3. 11. 20. 7	3. 18. 25. 55	0. 13. 50 N	0. 23. 55 S
W.	18	3. 25. 32. 30	4. 2. 39. 37	1. 1. 22 S	1. 37. 52
Th.	19	4. 9. 46. 55	4. 16. 54. 1	2. 12. 47	2. 45. 35
F.	20	4. 24. 0. 28	5. 1. 5. 45	3. 15. 42	3. 42. 40
Sa.	21	5. 8. 9. 17	5. 15. 10. 27	4. 6. 4	4. 25. 35
Sun.	22	5. 22. 8. 41	5. 29. 3. 25	4. 40. 57	4. 52. 3
M.	23	6. 5. 54. 5	6. 12. 40. 18	4. 58. 48	5. 1. 16
Tu.	24	6. 19. 21. 41	6. 25. 57. 58	4. 59. 31	4. 53. 46
W.	25	7. 2. 29. 5	7. 8. 54. 59	4. 44. 12	4. 31. 8
Th.	26	7. 15. 15. 44	7. 21. 31. 34	4. 14. 51	3. 55. 39
F.	27	7. 27. 42. 49	8. 3. 49. 51	3. 33. 53	3. 9. 51
Sa.	28	8. 9. 53. 9	8. 15. 53. 19	2. 43. 53	2. 16. 17
Sun.	29	8. 21. 50. 54	8. 27. 46. 33	1. 47. 22	1. 17. 24
M.	30	9. 3. 40. 57	9. 9. 34. 47	0. 46. 42	0. 15. 35

		T H E   M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	9	6. 22	252. 19	258. 53	25. 9 S	25. 16 S
M.	2	10	7. 12	265. 26	271. 57	25. 6	24. 39
Tu.	3	11	8. 1	278. 23	284. 45	23. 55	22. 55
W.	4	12	8. 49	291. 3	297. 16	21. 39	20. 10
Th.	5	13	9. 36	303. 23	309. 24	18. 27	16. 31
F.	6	14	10. 21	315. 22	321. 15	14. 25	12. 9
Sa.	7	15	11. 6	327. 5	332. 54	9. 43	7. 11
Sun.	8	16	11. 50	338. 42	344. 30	4. 33 S	1. 51 S
M.	9	17	12. 35	350. 21	356. 16	0. 54 N	3. 40 N
Tu.	10	18	13. 21	2. 16	8. 23	6. 25	9. 7
W.	11	19	14. 10	14. 38	21. 3	11. 44	14. 13
Th.	12	20	15. 3	27. 40	34. 28	16. 33	18. 41
F.	13	21	15. 58	41. 29	48. 42	20. 35	22. 11
Sa.	14	22	16. 57	56. 6	63. 40	23. 29	24. 25
Sun.	15	23	17. 58	71. 21	79. 7	24. 59	25. 9
M.	16	24	18. 59	86. 54	94. 40	24. 54	24. 15
Tu.	17	25	19. 58	102. 21	109. 54	23. 13	21. 48
W.	18	26	20. 54	117. 19	124. 33	20. 3	18. 0
Th.	19	27	21. 47	131. 37	138. 30	15. 41	13. 9
F.	20	28	22. 38	145. 14	151. 49	10. 27	7. 38
Sa.	21	29	23. 26	158. 16	164. 38	4. 43 N	1. 46 N
Sun.	22	1	0	170. 56	177. 12	1. 11 S	4. 5 S
M.	23	2	0. 14	183. 26	189. 40	6. 55	9. 38
Tu.	24	3	1. 2	195. 56	202. 14	12. 12	14. 35
W.	25	4	1. 51	208. 35	215. 0	16. 47	18. 45
Th.	26	5	2. 41	221. 28	228. 0	20. 29	21. 57
F.	27	6	3. 31	234. 34	241. 10	23. 8	24. 3
Sa.	28	7	4. 22	247. 48	254. 25	24. 39	24. 58
Sun.	29	8	5. 13	261. 0	267. 33	25. 0	24. 44
M.	30	9	6. 3	274. 2	280. 27	24. 11	23. 22

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sun.	1	14. 52	14. 50	54. 33	54. 27	5185	5193
M.	2	14. 49	14. 49	54. 23	54. 21	5198	5201
Tu.	3	14. 49	14. 49	54. 21	54. 24	5201	5197
W.	4	14. 51	14. 53	54. 30	54. 37	5189	5179
Th.	5	14. 55	14. 58	54. 46	54. 56	5167	5154
F.	6	15. 1	15. 5	55. 8	55. 22	5138	5120
Sa.	7	15. 9	15. 13	55. 37	55. 52	5100	5081
Sun.	8	15. 17	15. 22	56. 7	56. 23	5062	5041
M.	9	15. 26	15. 31	56. 39	56. 55	5021	5000
Tu.	10	15. 35	15. 39	57. 11	57. 26	4980	4961
W.	11	15. 43	15. 47	57. 40	57. 54	4943	4926
Th.	12	15. 50	15. 53	58. 7	58. 19	4910	4895
F.	13	15. 57	16. 0	58. 31	58. 42	4880	4866
Sa.	14	16. 2	16. 5	58. 52	59. 2	4854	4842
Sun.	15	16. 7	16. 9	59. 10	59. 17	4832	4823
M.	16	16. 11	16. 13	59. 24	59. 29	4815	4809
Tu.	17	16. 14	16. 14	59. 33	59. 35	4804	4801
W.	18	16. 14	16. 14	59. 36	59. 35	4800	4801
Th.	19	16. 14	16. 12	59. 33	59. 28	4804	4810
F.	20	16. 10	16. 8	59. 21	59. 12	4819	4830
Sa.	21	16. 5	16. 1	59. 1	58. 48	4843	4859
Sun.	22	15. 57	15. 52	58. 32	58. 15	4878	4900
M.	23	15. 47	15. 42	57. 56	57. 37	4923	4947
Tu.	24	15. 36	15. 31	57. 16	56. 55	4973	5000
W.	25	15. 25	15. 19	56. 34	56. 14	5027	5053
Th.	26	15. 14	15. 9	55. 55	55. 37	5077	5100
F.	27	15. 5	15. 1	55. 20	55. 5	5123	5142
Sa.	28	14. 57	14. 54	54. 52	54. 42	5159	5173
Sun.	29	14. 52	14. 50	54. 34	54. 28	5183	5191
M.	30	14. 49	14. 49	54. 24	54. 23	5197	5198

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	1	77.	0. 57	75.	40. 24	74.	20. 1	72.	59. 51	71.	39. 52	70.	20. 5	69.	0. 32	67.	41. 12
	2	66.	22. 6	65.	3. 14	63.	44. 37	62.	26. 14	61.	8. 7						
α Pegasi.	2	-	-	-	-	-	-	-	-	80.	3. 31	78.	37. 46	77.	12. 0	75.	46. 15
	3	74.	20. 29	72.	54. 44	71.	28. 58	70.	3. 13	68.	37. 27	67.	11. 40	65.	45. 53	64.	20. 6
	4	62.	54. 19	61.	28. 30	60.	2. 41	58.	36. 53	57.	11. 5	55.	45. 16	54.	19. 30	52.	53. 45
	5	51.	28. 3	50.	2. 23	48.	36. 48	47.	11. 17	45.	45. 51						
α Arietis.	5	-	-	-	-	-	-	-	-	87.	8. 23	85.	37. 22	84.	6. 9	82.	34. 45
	6	81.	3. 10	79.	31. 23	77.	59. 23	76.	27. 12	74.	54. 49	73.	22. 13	71.	49. 25	70.	16. 25
	7	68.	43. 12	67.	9. 46	65.	36. 8	64.	2. 17	62.	28. 14	60.	53. 57	59.	19. 28	57.	44. 47
	8	56.	9. 53	54.	34. 47	52.	59. 29	51.	23. 59	49.	48. 17						
Aldebaran.	8	-	-	-	-	-	-	-	-	82.	32. 36	80.	57. 7	79.	21. 25	77.	45. 31
	9	76.	9. 24	74.	33. 4	72.	56. 33	71.	19. 50	69.	42. 55	68.	5. 48	66.	28. 31	64.	51. 3
	10	63.	13. 25	61.	35. 37	59.	57. 40	58.	19. 35	56.	41. 20	55.	2. 56	53.	24. 26	51.	45. 49
	11	50.	7. 6	48.	28. 16	46.	49. 23	45.	10. 26	43.	31. 26	41.	52. 22	40.	13. 21	38.	34. 22
	12	36.	55. 25	35.	16. 29	33.	37. 45	31.	59. 14	30.	20. 55	28.	42. 56	27.	5. 22	25.	28. 14
Pollux.	13	23.	51. 33														
	13	64.	56. 36	63.	14. 15	61.	31. 48	59.	49. 14	58.	6. 34	56.	23. 48	54.	40. 58	52.	58. 3
	14	51.	15. 4	49.	32. 0	47.	48. 55	46.	5. 48	44.	22. 39	42.	39. 28	40.	56. 19	39.	13. 12
	15	37.	30. 8	35.	47. 8	34.	4. 15	32.	21. 29	30.	38. 51						

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Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	13	124.46.51	123.11.16	121.35.31	119.59.37	118.23.34	116.47.22	115.11.2	113.34.33
	14	111.57.56	110.21.11	108.44.19	107.7.19	105.30.11	103.52.56	102.15.34	100.38.6
	15	99.0.30	97.22.48	95.44.59	94.7.4	92.29.3	90.50.55	89.12.42	87.34.23
	16	85.56.0	84.17.30	82.38.56	81.0.18	79.21.34	77.42.46	76.3.54	74.24.58
	17	72.45.59	71.6.56	69.27.51	67.48.43	66.9.32	64.30.19	62.51.5	61.11.49
	18	59.33.33	57.53.16	56.14.0	54.34.45	52.55.31	51.16.18	49.37.8	47.58.1
Antares.	19	46.18.57	44.39.58	43.1.4	41.22.16	39.43.34			
	24	47.31.7	45.52.0	44.13.13	42.34.45	40.56.35	39.18.45	37.41.13	36.4.1
	25	34.27.8	32.50.34	31.14.20	29.38.25	28.2.50	26.27.34	24.52.37	23.18.0
α Aquilæ.	26	21.43.42							
	26	78.3.53	76.41.4	75.18.39	73.56.38	72.35.0	71.13.48	69.53.2	68.32.44
Fomalhaut.	27	67.12.53	65.53.30	64.34.38	63.16.15	61.58.23			
	27	- - -	- - -	- - -	- - -	86.20.43	84.57.58	83.35.28	82.13.10
	28	80.51.7	79.29.17	78.7.42	76.46.22	75.25.16	74.4.25	72.43.49	71.23.29
	29	70.3.24	68.43.35	67.24.2	66.4.47	64.45.49	63.27.7	62.8.45	60.50.43
	30	59.33.0	58.15.36	56.58.36	55.42.0	54.25.47	53.10.0	51.54.41	50.39.51
	0.1	49.25.30							



*DISTANCES of MOON's Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	1	95.	28. 52	96.	50. 38	98.	12. 19	99.	33. 56	100.	55. 29	102.	16. 57	103.	38. 21	104.	59. 43
	2	106.	21. 2	107.	42. 19	109.	3. 34	110.	24. 49	111.	46. 3	113.	7. 17	114.	28. 33	115.	49. 50
	3	117.	11. 8	118.	32. 28	119.	53. 52	121.	15. 19	122.	36. 49						
Spica $\eta$	1	52.	51. 2	54.	20. 6	55.	49. 6	57.	18. 2	58.	46. 54	60.	15. 42	61.	44. 27	63.	13. 10
	2	64.	41. 51	66.	10. 30	67.	39. 8	69.	7. 46	70.	36. 24	72.	5. 2	73.	33. 43	75.	2. 23
	3	76.	31. 9														
Antares.	3	30.	49. 3	32.	17. 53	33.	46. 47	35.	15. 46	36.	44. 48	38.	13. 55	39.	43. 8	41.	12. 27
	4	42.	41. 52	44.	11. 24	45.	41. 3	47.	10. 49	48.	40. 44	50.	10. 47	51.	40. 58	53.	11. 19
	5	54.	41. 49	56.	12. 29	57.	43. 19	59.	14. 19	60.	45. 30	62.	16. 52	63.	48. 24	65.	20. 9
	6	66.	52. 5	68.	24. 13	69.	56. 34	71.	29. 7	73.	1. 53	74.	34. 51	76.	8. 2	77.	41. 27
	7	79.	15. 4	80.	48. 55	82.	22. 59	83.	57. 17	85.	31. 48	87.	6. 32	88.	41. 30	90.	16. 42
	8	91.	52. 8	93.	27. 47	95.	3. 39	96.	39. 46	98.	16. 7						
	8	-	-	-	-	-	-	-	-	50.	4. 52	51.	31. 47	52.	39. 36	53.	58. 19
	9	55.	17. 56	56.	38. 22	57.	59. 31	59.	21. 24	60.	44. 0	62.	7. 13	63.	31. 1	64.	55. 23
$\alpha$ Aquilæ.	10	66.	20. 19	67.	45. 43	69.	11. 36	70.	37. 56	72.	4. 42	73.	31. 53	74.	59. 25	76.	27. 18
	11	77.	55. 33	79.	24. 6	80.	52. 55	82.	22. 1	83.	51. 22						
	11	-	-	-	-	-	-	-	-	36.	6. 6	37.	38. 3	39.	10. 44	40.	44. 9
$\epsilon$ Pegasi.	12	42.	18. 17	43.	53. 4	45.	28. 24	47.	4. 17	48.	40. 43	50.	17. 34	51.	54. 49	53.	32. 28
	13	55.	10. 32	56.	48. 54	58.	27. 35	60.	6. 35	61.	45. 53	63.	25. 27	65.	5. 16	66.	45. 19
	14	68.	25. 37														

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
♈ Aries.	14	24. 51. 30	26. 33. 40	28. 16. 10	29. 58. 59	31. 42. 7	33. 25. 31	35. 9. 10	36. 53. 3
	15	38. 37. 11	40. 21. 29	42. 5. 57	43. 50. 36	45. 35. 25	47. 20. 23	49. 5. 29	50. 50. 43
	16	52. 36. 6	54. 21. 36	56. 7. 12	57. 52. 55	59. 38. 44			
Aldebaran.	16	- - -	- - -	- - -	- - -	27. 52. 2	29. 33. 27	31. 15. 21	32. 57. 44
	17	34. 40. 36	36. 23. 51	38. 7. 26	39. 51. 20	41. 35. 32	43. 19. 56	45. 4. 31	46. 49. 17
	18	48. 34. 15	50. 19. 20	52. 4. 30	53. 49. 48	55. 35. 11	57. 20. 38	59. 6. 8	60. 51. 40
Pollux.	19	62. 37. 15	64. 22. 52	66. 8. 27	67. 54. 2	69. 39. 35			
	19	- - -	- - -	- - -	- - -	27. 56. 52	29. 40. 4	31. 23. 29	33. 7. 7
	20	34. 50. 58	36. 34. 57	38. 19. 1	40. 3. 9	41. 47. 22	43. 31. 34	45. 15. 43	46. 59. 47
The Sun.	21	48. 43. 48							
	25	- - -	- - -	- - -	- - -	36. 43. 39	38. 10. 50	39. 37. 47	41. 4. 27
	26	42. 30. 53	43. 57. 4	45. 22. 59	46. 48. 40	48. 14. 7	49. 39. 19	51. 4. 17	52. 29. 1
The Sun.	27	53. 53. 31	55. 17. 47	56. 41. 50	58. 5. 40	59. 29. 17	60. 52. 42	62. 15. 55	63. 38. 58
	28	65. 1. 49	66. 24. 30	67. 47. 1	69. 9. 23	70. 31. 36	71. 53. 40	73. 15. 37	74. 37. 26
	29	75. 59. 8	77. 20. 44	78. 42. 14	80. 3. 39	81. 24. 59	82. 46. 15	84. 7. 28	85. 28. 38
Antares.	30	86. 49. 45	88. 10. 51	89. 31. 55	90. 53. 0	92. 14. 3	93. 35. 7	94. 56. 12	96. 17. 19
	O. 1	97. 38. 27							
	30	26. 51. 38	28. 20. 17	29. 48. 56	31. 17. 35	32. 46. 15	34. 14. 56	35. 43. 39	37. 12. 25
Antares.	O. 1	38. 41. 13							

CONFIGURATIONS of the SATELLITES of JUPITER  
at VII o'Clock in the *Evening*.

1			3.		○	1. 2 6 4
2			.3		.1 ○	2. .4
3		1 ●		2. .3	○	.4
4				.2	○ .1	.3 .4
5				1.	○	.2 .3 4.
6					○ 2. .1	3. 4.
7		3 ●		.2 1.	○	4.
8				3.	○ .2 1.	4.
9		4 6		.3 .1	○	2.
10				4. .3 2.	○ 1.	
11		1. ○		4. .2	○	.3
12				1.	○	.2 .3
13		4			○ 2. 1	3.
14		.4		2. 1.	○ 3.	
15		2. ○		.4 1.	○	1.
16				.3 .4 .1	○	2.
17				.3 2. 4	○ 1.	
18				.2 .1	○ .3 .4	
19		1 ●			○	.2 .3 .4
20					○ .1 2.	3. .4
21				2. 1.	○ 1.	.4
22				3. .2	○ .1	4.
23		+		3. .1	○	2. 4.
24		2 ●		.3	○ 1.	4.
25		3. ○		.2 .1	○	4.
26				4.	○ 1.	.2 .3
27				4.	○ .1 2.	3.
28				4. 2. 1.	○ 3.	
29				4. 3. .2	○ .1	
30		.4		3. 1.	○	.2

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M. ○ Full Moon ---- 8. 2. 12 ☾ Last Quarter ---- 14. 23. 2 ● New Moon ---- 22. 1. 41 ☽ First Quarter ---- 30. 3. 22
Tu.	1	Remigius.	Other Phenomena.
W.	2		D. H. M.
Th.	3		1. - - ♀ ♂, ♀ 11' S.
F.	4		2. - - ♀ α ♄, * 55' N.
Sa.	5		4. 17. 20 ☽ θ ☿
Sun.	6	17th Sun. after Tr. Faith	8. 18. 21 ☽ η ✕
M.	7		11. 3. 0 ☽ η Pleiadum.
Tu.	8		12. 21. 58 ☽ 125 ♄
W.	9	St. Denys.	13. 1. 28 ☽ 132 ♄
Th.	10	Oxf. and Camb. T. beg.	14. 13. 7 ☽ δ ♄
F.	11		16. - - ♀ δ ♄, * 40' S.
Sa.	12		16. 21. 52 ☽ ξ ♄
Sun.	13	18th Sun. after Tr. Transl.	17. 2. 22 ☽ ο ♄
M.	14	[of K. Edw. Conf.]	17. 11. 7 ☽ π ♄
Tu.	15		19. 6. 56 ☽ ε ♄
W.	16		20. - - ♂ κ ♄, * 31' N.
Th.	17	Etheldred.	23. 8. 36 ☾ enters ♄
F.	18	St. Luke.	24. - - ♂ λ ♄, * 40' N.
Sa.	19		24. 22. 57 ☽ ϖ ♄
Sun.	20	19th Sunday after Trinity.	25. 9. 42 ☽ ♀
M.	21		26. 1. 54 ☽ θ Ophiuchi.
Tu.	22		27. 8. 0 ☽ λ ♄
W.	23		28. 4. 12 ☽ π ♄
Th.	24		
F.	25	K. Geo. III. Acces. Crisp.	
Sa.	26	K. Geo. III. Procl. 1760.	
Sun.	27	20th Sun. after Trinity.	
M.	28	St. Simon and St. Jude.	
Tu.	29		
W.	30		
Th.	31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R <sup>t</sup> . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	6. 7. 50. 17	12. 28. 47. 3	3. 6. 46	10. 15. 9	
W.	2	6. 8. 49. 23	12. 32. 24. 9	3. 30. 5	10. 34. 8	18, 9
Th.	3	6. 9. 48. 31	12. 36. 2. 8	3. 53. 22	10. 53. 4	18, 6
F.	4	6. 10. 47. 41	12. 39. 41. 0	4. 16. 36	11. 11. 7	18, 3
Sa.	5	6. 11. 46. 53	12. 43. 19. 5	4. 39. 48	11. 29. 7	18, 0
						17, 6
Sun.	6	6. 12. 46. 7	12. 46. 58. 4	5. 2. 55	11. 47. 3	
M.	7	6. 13. 45. 22	12. 50. 37. 6	5. 25. 59	12. 4. 6	17, 3
Tu.	8	6. 14. 44. 39	12. 54. 17. 3	5. 48. 58	12. 21. 4	16, 8
W.	9	6. 15. 43. 59	12. 57. 57. 4	6. 11. 53	12. 37. 8	16, 4
Th.	10	6. 16. 43. 21	13. 1. 37. 9	6. 34. 44	12. 53. 8	16, 0
						15, 5
F.	11	6. 17. 42. 44	13. 5. 18. 9	6. 57. 29	13. 9. 3	
Sa.	12	6. 18. 42. 11	13. 9. 0. 5	7. 20. 8	13. 24. 3	15, 0
Sun.	13	6. 19. 41. 39	13. 12. 42. 5	7. 42. 41	13. 38. 8	14, 5
M.	14	6. 20. 41. 10	13. 16. 25. 1	8. 5. 9	13. 52. 7	13, 9
Tu.	15	6. 21. 40. 43	13. 20. 8. 2	8. 27. 29	14. 6. 1	13, 4
						12, 8
W.	16	6. 22. 40. 19	13. 23. 51. 9	8. 49. 43	14. 18. 9	
Th.	17	6. 23. 39. 57	13. 27. 36. 2	9. 11. 49	14. 31. 1	12, 2
F.	18	6. 24. 39. 37	13. 31. 21. 2	9. 33. 47	14. 42. 7	11, 6
Sa.	19	6. 25. 39. 20	13. 35. 6. 7	9. 55. 37	14. 53. 7	11, 0
Sun.	20	6. 26. 39. 5	13. 38. 52. 9	10. 17. 19	15. 4. 0	10, 3
						9, 7
M.	21	6. 27. 38. 52	13. 42. 39. 8	10. 38. 51	15. 13. 7	
Tu.	22	6. 28. 38. 41	13. 46. 27. 3	11. 0. 14	15. 22. 7	9, 0
W.	23	6. 29. 38. 32	13. 50. 15. 5	11. 21. 27	15. 31. 1	8, 4
Th.	24	7. 0. 38. 25	13. 54. 4. 4	11. 42. 30	15. 38. 7	7, 6
F.	25	7. 1. 38. 20	13. 57. 54. 0	12. 3. 22	15. 45. 6	6, 9
						6, 3
Sa.	26	7. 2. 38. 17	14. 1. 44. 3	12. 24. 3	15. 51. 9	
Sun.	27	7. 3. 38. 15	14. 5. 35. 2	12. 44. 32	15. 57. 4	5, 5
M.	28	7. 4. 38. 16	14. 9. 27. 0	13. 4. 49	16. 2. 2	4, 8
Tu.	29	7. 5. 38. 18	14. 13. 19. 5	13. 24. 54	16. 6. 3	4, 1
W.	30	7. 6. 38. 22	14. 17. 12. 8	13. 44. 46	16. 9. 6	3, 3
						2, 5
Th.	31	7. 7. 38. 27	14. 21. 6. 8	14. 4. 25	16. 12. 1	

Days	Time of ☉'s Semidiam. pass <sup>s</sup> Merid.	THE SUN's			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 2	16. 1. 2	2. 27. 8	0.000095	9. 12. 5
7	1. 4. 5	16. 2. 8	2. 28. 3	9.999329	9. 11. 46
13	1. 4. 9	16. 4. 5	2. 28. 8	9.998589	9. 11. 27
19	1. 5. 4	16. 6. 1	2. 29. 3	9.997873	9. 11. 8
25	1. 6. 0	16. 7. 7	2. 29. 8	9.997160	9. 10. 49

ECLIPSES of the SATELLITES of JUPITER.  
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	17. 46. 33	1	10. 32. 42	6	3. 0. 16 Im.
3	12. 15. 17	4	23. 51. 39	6	5. 28. 52 E.
5	6. 43. 56	8	13. 9. 55	13	6. 58. 48 Im.
7	1. 12. 38	12	2. 28. 57	13	9. 28. 16 E.
8	19. 41. 17	15	15. 47. 12	20	10. 57. 10 Im.
10	14. 9. 58	19	5. 6. 20	20	13. 27. 36 E.
12	8. 38. 37	22	18. 24. 33	27	14. 55. 57 Im.
14	3. 7. 18	26	7. 43. 43	27	17. 27. 20 E.
15	21. 35. 55	29	21. 1. 56		
17	16. 4. 35				
19	10. 33. 12				
21	5. 1. 52				
22	23. 30. 28				
24	17. 59. 7				
26	12. 27. 43				
28	6. 56. 22				
30	1. 24. 55				
31	19. 53. 34				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Gr. Elong. 5 <sup>d</sup> .							
1	1. 25. 28	1. 9 N	5. 21. 41	0. 26 N	3. 42 N	23. 0	
4	2. 14. 16	3. 20	5. 23. 7	1. 8	3. 47	22. 57	
7	3. 3. 9	5. 8	5. 25. 52	1. 37	3. 8	22. 58	
10	3. 21. 27	6. 22	5. 29. 35	1. 53	1. 54	23. 2	
13	4. 8. 39	6. 57	6. 3. 58	2. 0	0. 16 N	23. 7	
16	4. 24. 29	6. 55	6. 8. 44	1. 58	1. 40 S	23. 14	
19	5. 8. 53	6. 28	6. 13. 42	1. 51	3. 42	23. 20	
22	5. 21. 57	5. 41	6. 18. 45	1. 38	5. 51	23. 28	
25	6. 3. 51	4. 43	6. 23. 49	1. 23	7. 58	23. 35	
28	6. 14. 47	3. 39	6. 28. 50	1. 5	10. 4	23. 42	
31	6. 24. 54	2. 32	7. 3. 49	0. 46	12. 5	23. 49	
♀ VENUS.							
1	9. 0. 11	0. 54 S	7. 11. 8	0. 30 S	15. 39 S	2. 5	
7	9. 9. 40	1. 25	7. 18. 23	0. 49	18. 6	2. 12	
13	9. 19. 9	1. 55	7. 25. 38	1. 7	20. 17	2. 19	
19	9. 28. 38	2. 21	8. 2. 51	1. 25	22. 9	2. 27	
25	10. 8. 7	2. 43	8. 10. 4	1. 42	23. 41	2. 35	
♂ MARS.							
1	8. 2. 28	0. 28 S	7. 11. 9	0. 19 S	15. 29 S	2. 6	
7	8. 5. 40	0. 34	7. 15. 19	0. 22	16. 47	2. 0	
13	8. 8. 54	0. 39	7. 19. 32	0. 26	18. 3	1. 55	
19	8. 12. 10	0. 45	7. 23. 47	0. 29	19. 13	1. 50	
25	8. 15. 28	0. 51	7. 28. 4	0. 33	20. 17	1. 45	
♃ JUPITER.							
1	8. 11. 48	0. 35 N	8. 2. 56	0. 32 N	20. 15 S	3. 35	
7	8. 12. 17	0. 35	8. 3. 59	0. 31	20. 27	3. 17	
13	8. 12. 45	0. 34	8. 5. 5	0. 31	20. 40	3. 0	
19	8. 13. 14	0. 34	8. 6. 14	0. 30	20. 54	2. 42	
25	8. 13. 42	0. 33	8. 7. 26	0. 29	21. 6	2. 25	
♄ SATURN. δ 12 <sup>d</sup> . 11 <sup>h</sup> .							
1	6. 18. 48	2. 30 N	6. 17. 46	2. 16 N	4. 53 S	0. 40	
7	6. 18. 59	2. 30	6. 18. 30	2. 16	5. 10	0. 21	
13	6. 19. 11	2. 30	6. 19. 14	2. 16	5. 26	0. 2	
19	6. 19. 23	2. 30	6. 19. 58	2. 16	5. 43	23. 39	
25	6. 19. 35	2. 30	6. 20. 42	2. 16	5. 59	23. 19	
♅ GEORGIAN. δ 14 <sup>d</sup> . 15 <sup>h</sup> .							
1	6. 21. 9	0. 36 N	6. 20. 29	0. 35 N	7. 29 S	0. 48	
11	6. 21. 17	0. 36	6. 21. 5	0. 34	7. 42	0. 13	
21	6. 21. 25	0. 36	6. 21. 44	0. 34	7. 57	23. 35	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S.	D. M. S.	S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Tu	1	9. 15. 28. 45	9. 21. 23. 34	0. 15. 44 N	0. 46. 58 N				
W.	2	9. 27. 19. 53	10. 3. 18. 24	1. 17. 47	1. 47. 55				
Th.	3	10. 9. 19. 42	10. 15. 24. 22	2. 17. 3	2. 44. 53				
F.	4	10. 21. 32. 55	10. 27. 45. 49	3. 11. 3	3. 35. 14				
Sa.	5	11. 4. 3. 24	11. 10. 25. 57	3. 57. 5	4. 16. 14				
Sun.	6	11. 16. 53. 37	11. 23. 26. 28	4. 32. 22	4. 45. 7				
M.	7	0. 0. 4. 24	0. 6. 47. 16	4. 54. 11	4. 59. 19				
Tu.	8	0. 13. 34. 48	0. 20. 26. 35	5. 0. 17	4. 56. 56				
W.	9	0. 27. 22. 7	1. 4. 20. 54	4. 49. 12	4. 37. 6				
Th.	10	1. 11. 22. 21	1. 18. 25. 52	4. 20. 42	4. 0. 14				
F.	11	1. 25. 30. 52	2. 2. 36. 51	3. 35. 58	3. 8. 15				
Sa.	12	2. 9. 43. 15	2. 16. 49. 42	2. 37. 34	2. 4. 23				
Sun.	13	2. 23. 55. 50	3. 1. 1. 19	1. 29. 15	0. 52. 45 N				
M.	14	3. 8. 6. 1	3. 15. 9. 44	0. 15. 28 N	0. 21. 59 S				
Tu.	15	3. 22. 12. 25	3. 29. 13. 54	0. 59. 0 S	1. 35. 1				
W.	16	4. 6. 14. 13	4. 13. 13. 14	2. 9. 29	2. 41. 52				
Th.	17	4. 20. 10. 52	4. 27. 7. 0	3. 11. 43	3. 38. 35				
F.	18	5. 4. 1. 28	5. 10. 54. 5	4. 2. 7	4. 22. 0				
Sa.	19	5. 17. 44. 38	5. 24. 32. 48	4. 38. 0	4. 49. 56				
Sun.	20	6. 1. 18. 21	6. 8. 1. 0	4. 57. 44	5. 1. 19				
M.	21	6. 14. 40. 24	6. 21. 16. 21	5. 0. 45	4. 56. 9				
Tu.	22	6. 27. 48. 32	7. 4. 16. 52	4. 47. 42	4. 35. 36				
W.	23	7. 10. 41. 8	7. 17. 1. 21	4. 20. 6	4. 1. 30				
Th.	24	7. 23. 17. 29	7. 29. 29. 40	3. 40. 8	3. 16. 19				
F.	25	8. 5. 38. 3	8. 11. 42. 57	2. 50. 26	2. 22. 46				
Sa.	26	8. 17. 44. 40	8. 23. 43. 39	1. 53. 42	1. 23. 33				
Sun.	27	8. 29. 40. 22	9. 5. 35. 22	0. 52. 37 S	0. 21. 14 S				
M.	28	9. 11. 29. 13	9. 17. 22. 34	0. 10. 18 N	0. 41. 44 N				
Tu.	29	9. 23. 16. 3	9. 29. 10. 22	1. 12. 44	1. 43. 2				
W.	30	10. 5. 6. 12	10. 11. 4. 15	2. 12. 21	2. 46. 25				
Th.	31	10. 17. 5. 11	10. 23. 9. 42	3. 6. 55	3. 31. 33				



Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
Tu.	1	10	6. 51	286. 46	293. 0	22. 18 S	20. 59 S
W.	2	11	7. 38	299. 8	305. 10	19. 26	17. 41
Th.	3	12	8. 24	311. 9	317. 2	15. 44	13. 36
F.	4	13	9. 9	322. 53	328. 42	11. 19	8. 54
Sa.	5	14	9. 52	334. 30	340. 19	6. 21	3. 43 S
Sun.	6	15	10. 37	346. 11	352. 6	1. 0 S	1. 45 N
M.	7	16	11. 24	358. 7	4. 15	4. 31 N	7. 16
Tu.	8	17	12. 13	10. 31	16. 58	9. 58	12. 34
W.	9	18	13. 5	23. 36	30. 27	15. 2	17. 20
Th.	10	19	14. 1	37. 31	44. 47	19. 23	21. 11
F.	11	20	15. 0	52. 15	59. 53	22. 40	23. 47
Sa.	12	21	16. 1	67. 38	75. 28	24. 32	24. 53
Sun.	13	22	17. 2	83. 19	91. 7	24. 49	24. 20
M.	14	23	18. 1	98. 50	106. 25	23. 28	22. 14
Tu.	15	24	18. 57	113. 49	121. 2	20. 40	18. 47
W.	16	25	19. 50	128. 4	134. 54	16. 39	14. 17
Th.	17	26	20. 40	141. 34	148. 4	11. 44	9. 4
F.	18	27	21. 28	154. 26	160. 43	6. 17	3. 27 N
Sa.	19	28	22. 15	166. 56	173. 5	0. 35 N	2. 16 S
Sun.	20	29	23. 2	179. 13	185. 22	5. 4 S	7. 48
M.	21	30	23. 49	191. 32	197. 45	10. 24	12. 53
Tu.	22	1	0	204. 3	210. 24	15. 11	17. 17
W.	23	2	0. 38	216. 49	223. 20	19. 10	20. 48
Th.	24	3	1. 29	229. 54	236. 31	22. 10	23. 16
F.	25	4	2. 20	243. 10	249. 50	24. 4	24. 34
Sa.	26	5	3. 11	256. 29	263. 5	24. 47	24. 42
Sun.	27	6	4. 1	269. 38	276. 6	24. 20	23. 42
M.	28	7	4. 50	282. 28	288. 44	22. 48	21. 39
Tu.	29	8	5. 37	294. 54	300. 57	20. 16	18. 40
W.	30	9	6. 22	306. 54	312. 46	16. 52	14. 54
Th.	31	10	7. 6	318. 34	324. 20	12. 46	10. 29

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Tu.	1	14. 50	14. 51	54. 25	54. 30	5195	5189
W.	2	14. 53	14. 55	54. 36	54. 46	5181	5167
Th.	3	14. 59	15. 2	54. 58	55. 11	5152	5134
F.	4	15. 6	15. 11	55. 26	55. 43	5115	5093
Sa.	5	15. 16	15. 22	56. 2	56. 22	5068	5042
Sun.	6	15. 27	15. 32	56. 42	57. 2	5017	4991
M.	7	15. 38	15. 43	57. 22	57. 42	4966	4941
Tu.	8	15. 49	15. 53	58. 1	58. 18	4917	4896
W.	9	15. 57	16. 1	58. 34	58. 48	4876	4859
Th.	10	16. 5	16. 8	59. 1	59. 11	4843	4831
F.	11	16. 10	16. 11	59. 19	59. 25	4821	4813
Sa.	12	16. 12	16. 13	59. 29	59. 31	4809	4806
Sun.	13	16. 13	16. 13	59. 32	59. 31	4805	4806
M.	14	16. 12	16. 11	59. 29	59. 25	4809	4813
Tu.	15	16. 10	16. 8	59. 20	59. 14	4820	4827
W.	16	16. 6	16. 4	59. 7	58. 59	4835	4845
Th.	17	16. 2	15. 59	58. 50	58. 40	4856	4869
F.	18	15. 56	15. 53	58. 30	58. 18	4881	4896
Sa.	19	15. 50	15. 46	58. 6	57. 53	4911	4927
Sun.	20	15. 43	15. 38	57. 39	57. 24	4945	4964
M.	21	15. 34	15. 30	57. 9	56. 53	4983	5003
Tu.	22	15. 26	15. 21	56. 37	56. 21	5023	5044
W.	23	15. 17	15. 12	56. 4	55. 48	5065	5086
Th.	24	15. 8	15. 4	55. 33	55. 18	5106	5125
F.	25	15. 0	14. 57	55. 4	54. 53	5144	5158
Sa.	26	14. 55	14. 52	54. 43	54. 34	5171	5183
Sun.	27	14. 50	14. 49	54. 27	54. 22	5193	5199
M.	28	14. 48	14. 48	54. 20	54. 20	5202	5202
Tu.	29	14. 49	14. 51	54. 23	54. 28	5198	5191
W.	30	14. 53	14. 55	54. 36	54. 46	5181	5167
Th.	31	14. 59	15. 3	54. 59	55. 14	5150	5130

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	66.42.15		65.16.49		63.51.24		62.26.0		61.0.38		59.35.17		58.9.57		56.44.40	
	2	55.19.24		53.54.9		52.28.57		51.3.49		49.38.44		48.13.41		46.48.46		45.23.57	
	3	43.59.15		42.34.43		41.10.22		39.46.13		38.22.17							
α Arietis.	3	-	-	-	-	-	-	-	-	79.14.11		77.42.42		76.11.0		74.39.3	
	4	73.6.52		71.34.26		70.1.46		68.28.50		66.55.39		65.22.12		63.48.30		62.14.31	
	5	60.40.17		59.5.46		57.30.58		55.55.54		54.20.34		52.44.57		51.9.4		49.32.55	
	6	47.56.29															
Aldebaran.	6	80.42.14		79.5.49		77.29.6		75.52.6		74.14.49		72.37.15		70.59.24		69.21.17	
	7	67.42.53		66.4.13		64.25.17		62.46.7		61.6.41		59.27.0		57.47.7		56.7.0	
	8	54.26.41		52.46.9		51.5.27		49.24.36		47.43.35		46.2.25		44.21.11		42.39.51	
	9	40.58.27		39.16.58		37.35.32		35.54.9		34.12.50		32.31.41		30.50.43		29.9.58	
	10	27.29.30															
Pollux.	10	68.50.48		67.6.19		65.21.44		63.37.2		61.52.15		60.7.23		58.22.28		56.37.30	
	11	54.52.29		53.7.25		51.22.22		49.37.20		47.52.18		46.7.19		44.22.24		42.37.34	
	12	40.52.49															
Regulus.	12	77.24.18		75.37.45		73.51.11		72.4.38		70.18.6		68.31.33		66.45.1		64.58.30	
	13	63.12.1		61.25.34		59.39.11		57.52.50		56.6.32		54.20.17		52.34.7		50.48.0	
	14	49.1.58		47.16.1		45.30.10		43.44.24		41.58.45		40.13.12		38.27.47		36.42.29	
	15	34.57.19															

Stars Names.	Days	Noon.		III <sup>b</sup> .		VI <sup>b</sup> .		IX <sup>b</sup> .		Midnight.		XV <sup>b</sup> .		XVIII <sup>b</sup> .		XXI <sup>b</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	12	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	122.20.47	120.41.53	119.3.0	119.3.0	105.52.28	104.13.47	117.24.7	
	13	115.45.15	114.6.24	112.27.34	110.48.45	109.9.58	107.31.12	105.52.28	104.13.47	96.1.13	94.22.52	92.44.36	91.6.25	89.28.18	87.50.17	86.12.22	
	14	102.35.9	100.56.35	99.18.4	97.39.37	96.1.13	94.22.52	92.44.36	91.6.25	82.56.47	81.19.7	79.41.32	78.4.4	76.26.41	74.49.25	73.12.16	
	15	89.28.18	87.50.17	86.12.22	84.34.32	82.56.47	81.19.7	79.41.32	78.4.4	69.58.17	68.21.28	66.44.46	65.8.12	63.31.45	61.55.26	60.19.15	
	16	76.26.41	74.49.25	73.12.16	71.35.13	69.58.17	68.21.28	66.44.46	65.8.12	57.7.17	55.31.31	53.55.54	52.20.26	50.45.8	49.10.0	47.35.2	
	17	63.31.45	61.55.26	60.19.15	58.43.12	57.7.17	55.31.31	53.55.54	52.20.26	44.25.38	42.51.12	41.16.58	39.42.56	38.9.5			
α Aquilæ.	18	50.45.8	49.10.0	47.35.2	46.0.15					76.26.51	75.3.58	73.41.26	72.19.16	70.57.30	69.36.8	68.15.12	
	19	38.9.5								65.34.41	64.15.8	62.56.5	61.37.33	60.19.33			
	20	25.30.19															
Fomalhaut.	21	70.57.30															
	22	60.19.33															
	23	46.46.42															
α Pegasi.	24	73.49.47															
	25	63.10.46															
	26	81.55.13															
α Arietis.	27	70.28.2															
	28	59.6.39															
	29	47.50.28															
N. 1	30	- - -															
	31	77.31.19															
	32	65.21.34															

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	1	97.	38.28	98.	59.41	100.	20.56	101.	42.16	103.	3.40	104.	25.9	105.	46.44	107.	8.25
	2	108.	30.12	109.	52.7	111.	14.11	112.	36.22	113.	58.42	115.	21.11	116.	43.50	118.	6.39
	3	119.	29.38	120.	52.48												
Antares.	1	38.	41.14	40.	10.5	41.	39.0	43.	8.0	44.	37.5	46.	6.15	47.	35.32	49.	4.55
	2	50.	34.25	52.	4.3	53.	33.50	55.	3.46	56.	33.51	58.	4.6	59.	34.31	61.	5.7
	3	62.	35.54	64.	6.53	65.	38.5	67.	9.29	68.	41.6	70.	12.57	71.	45.2	73.	17.21
	4	74.	49.55	76.	22.44	77.	55.49	79.	29.10	81.	2.47	82.	36.41	84.	10.51	85.	45.18
	5	87.	22.2	88.	55.4	90.	30.23	92.	6.0	93.	41.55	95.	18.8	96.	54.39	98.	31.29
	6	100.	8.37														
α Aquilæ.	6	51.	32.30	52.	51.18	54.	11.3	55.	31.41	56.	53.12	58.	15.34	59.	38.40	61.	2.32
	7	62.	27.8	63.	52.23	65.	18.15	66.	44.44	68.	11.50	69.	39.29	71.	7.37	72.	36.15
	8	74.	5.23	75.	34.56	77.	4.52	78.	35.12	80.	5.54	81.	36.56	83.	8.16	84.	39.53
	9	86.	11.46														
α Pegasi.	9	38.	29.51	40.	5.14	41.	41.21	43.	18.9	44.	55.35	46.	33.38	48.	12.12	49.	51.16
	10	51.	30.50	53.	10.47	54.	51.6	56.	31.46	58.	12.47	59.	54.5	61.	35.39	63.	17.27
	11	64.	59.27														
α Arietis.	11	21.	22.20	23.	5.34	24.	49.13	26.	33.15	28.	17.37	30.	2.18	31.	47.14	33.	32.22
	12	35.	17.45	37.	3.14	38.	48.50	40.	34.32	42.	20.21	44.	6.14	45.	52.9	47.	38.7
	13	49.	24.5														

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	13	18. 12. 40	19. 48. 48	- - -	21. 26. 12	23. 4. 43	24. 44. 15	26. 24. 43	28. 5. 49	29. 47. 32	29. 30. 11	30. 37. 28	31. 13. 37	32. 53. 38	33. 13. 37	34. 45. 57	35. 41. 0
	14	31. 29. 52	33. 12. 21	- - -	34. 55. 6	36. 38. 8	38. 21. 25	40. 4. 48	41. 48. 17	43. 31. 53	43. 31. 53	44. 31. 53	45. 31. 53	46. 31. 53	47. 31. 53	48. 31. 53	49. 31. 53
	15	45. 15. 36	46. 59. 19	- - -	48. 43. 4	50. 26. 51	52. 10. 39	53. 54. 27	55. 38. 12	57. 21. 57	57. 21. 57	58. 21. 57	59. 21. 57	60. 21. 57	61. 21. 57	62. 21. 57	63. 21. 57
	16	59. 5. 40	60. 49. 20	- - -	62. 32. 57	64. 16. 29	65. 59. 58	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	16	- - -	- - -	- - -	- - -	- - -	24. 29. 40	26. 9. 30	27. 49. 41	29. 30. 11	29. 30. 11	30. 37. 28	31. 13. 37	32. 53. 38	33. 13. 37	34. 45. 57	35. 41. 0
	17	31. 10. 58	32. 52. 0	- - -	34. 33. 11	36. 14. 31	37. 55. 59	39. 37. 28	41. 18. 57	43. 0. 28	43. 0. 28	44. 0. 28	45. 0. 28	46. 0. 28	47. 0. 28	48. 0. 28	49. 0. 28
	18	44. 41. 59	46. 23. 28	- - -	48. 4. 55	49. 46. 17	51. 27. 33	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	18	- - -	- - -	- - -	- - -	- - -	14. 34. 39	16. 13. 41	17. 53. 3	19. 32. 42	19. 32. 42	20. 32. 42	21. 32. 42	22. 32. 42	23. 32. 42	24. 32. 42	25. 32. 42
Regulus.	19	21. 12. 35	22. 52. 41	- - -	24. 32. 49	26. 13. 4	27. 53. 21	29. 33. 31	31. 13. 37	32. 53. 38	32. 53. 38	33. 53. 38	34. 53. 38	35. 53. 38	36. 53. 38	37. 53. 38	38. 53. 38
	20	34. 33. 35	36. 13. 24	- - -	37. 53. 5	39. 32. 36	41. 11. 57	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	25	- - -	- - -	- - -	- - -	- - -	39. 38. 13	41. 0. 56	42. 23. 31	43. 45. 57	43. 45. 57	44. 45. 57	45. 45. 57	46. 45. 57	47. 45. 57	48. 45. 57	49. 45. 57
	26	45. 8. 15	46. 30. 25	- - -	47. 52. 29	49. 14. 24	50. 36. 13	51. 57. 55	53. 19. 30	54. 41. 0	54. 41. 0	55. 41. 0	56. 41. 0	57. 41. 0	58. 41. 0	59. 41. 0	60. 41. 0
The Sun.	27	56. 2. 23	57. 23. 41	- - -	58. 44. 54	60. 6. 4	61. 27. 8	62. 48. 9	64. 9. 8	65. 30. 4	65. 30. 4	66. 30. 4	67. 30. 4	68. 30. 4	69. 30. 4	70. 30. 4	71. 30. 4
	28	66. 50. 57	68. 11. 49	- - -	69. 32. 41	70. 53. 32	72. 14. 22	73. 35. 13	74. 56. 5	76. 16. 59	76. 16. 59	77. 16. 59	78. 16. 59	79. 16. 59	80. 16. 59	81. 16. 59	82. 16. 59
	29	77. 37. 55	78. 58. 54	- - -	80. 19. 56	81. 41. 2	83. 2. 13	84. 23. 29	85. 44. 51	87. 6. 19	87. 6. 19	88. 6. 19	89. 6. 19	90. 6. 19	91. 6. 19	92. 6. 19	93. 6. 19
	30	88. 27. 54	89. 49. 36	- - -	91. 11. 27	92. 33. 27	93. 55. 35	95. 17. 53	96. 40. 22	98. 3. 2	98. 3. 2	99. 3. 2	100. 3. 2	101. 3. 2	102. 3. 2	103. 3. 2	104. 3. 2
Antares.	31	99. 25. 53	100. 48. 57	- - -	102. 12. 14	103. 35. 44	104. 59. 27	106. 23. 24	107. 47. 37	109. 12. 6	109. 12. 6	110. 12. 6	111. 12. 6	112. 12. 6	113. 12. 6	114. 12. 6	115. 12. 6
	N. 1	110. 36. 49	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	30	58. 23. 44	59. 53. 10	- - -	61. 22. 45	62. 52. 28	64. 22. 20	65. 52. 22	67. 22. 35	68. 52. 59	68. 52. 59	69. 52. 59	70. 52. 59	71. 52. 59	72. 52. 59	73. 52. 59	74. 52. 59
	31	70. 23. 34	71. 54. 22	- - -	73. 25. 24	74. 56. 39	76. 28. 7	77. 59. 49	79. 31. 47	81. 4. 1	81. 4. 1	82. 4. 1	83. 4. 1	84. 4. 1	85. 4. 1	86. 4. 1	87. 4. 1
Antares.	N. 1	82. 36. 30	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER  
at VI o'Clock in the *Evening*.

1	•4	•3	○	1.	2 ●
2	•4	•2	•1	•3	○
3	•4	○	•2	•3	
4	1. ○	•4	○	2.	1.
5	1 ●	2.	○	•4	3.
6		•2	•3	○	•1
7		3.	1.	○	•2
8		•3	○	2.	•1
9		2.	1 ○ 3	○	4.
10	2. ○		○	1.	•3
11		•1	○	2.	4. •3
12	1 ●	2.	○	4.	3.
13	3 ●	•2	4.	○	•1
14		3 ○ 4	1.	○	•2
15	4.	•3	○	2.	•1
16	•4	•3	○		
17	•4	•1	○	1. •3	2. ○
18	•4	•1	○	2.	•3
19	•4	2.	○	1.	7.
20	1. ○	2 ○ 4	○	3.	
21	4. ○	1.	1.	○	•2
22	•3		○	•1	•4
23		•2	1.	○	•4
24		•2	○	•3	1.
25		•1	○	•2	•3
26	2 ●		○	1.	3.
27		•2	•1	○	3.
28	1 ●	3.	○	•2	4.
29		3.	○	•1	4.
30		•3	2. 4. 1.	○	
31		•2	○	•3	•1

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			○ Full Moon ----- 6. 13. 55
			☾ Last Quarter ----- 13. 6. 46
			● New Moon ----- 20. 17. 36
			☽ First Quarter ----- 28. 23. 1
			Other Phenomena.
			D. H. M.
			1. 2. 25 ☽ 0 $\infty$
			1. - - - ☽ 0 Ophiuchi, * 11' N.
			5. 3. 56 ☽ $\pi$ $\times$
			7. 11. 30 ☽ $\pi$ Pleiadum.
			9. 5. 12 ☽ 125 $\times$
			9. 8. 35 ☽ 132 $\times$
			9. 21. 23 ☽ $\mu$ $\Pi$
			10. 19. 16 ☽ $\delta$ $\Pi$
			13. 3. 15 ☽ $\xi$ $\Omega$
			13. 7. 44 ☽ 0 $\Omega$
			13. 16. 30 ☽ $\pi$ $\Omega$
			13. - - - ☽ $\lambda$ $\uparrow$ , * 17' North.
			15. 12. 43 ☽ e $\Omega$
			18. - - - ☽ $\sigma$ $\uparrow$ , * 57' South.
			22. 4. 51 ☉ enters $\uparrow$
			23. - - - ☽ $\beta$ Ophiuchi, * 8' S.
			24. 9. 3 ☽ 0 $\uparrow$
			24. 11. 37 ☽ $\pi$ $\uparrow$
			28. 10. 40 ☽ 0 $\infty$
F.	1	All Saints.	
Sa.	2	Duke of Kent born.	
Sun.	3	21 <sup>st</sup> Su. aft. Tr. Prs. Sophia	
M.	4	[b. On mor. of All Souls 11 r.	
Tu.	5	Powder Plot, 1605.	
W.	6	Leon <sup>d</sup> . Mich. Term beg.	
Th.	7		
F.	8	Prs. Aug. Sophia born.	
Sa.	9		
Sun.	10	22 <sup>d</sup> Sunday after Trinity.	
M.	11	St. Martin.	
Tu.	12	On mor. of St. M. 2 ret.	
W.	13	Britius. [Cam. T. div. m.	
Th.	14		
F.	15	Machutus.	
Sa.	16		
		[Lincoln.	
Sun.	17	23 <sup>d</sup> Su. aft. Tr. Hu. Bp. of	
M.	18	In 8 days of St. Mart. 3 ret.	
Tu.	19		
W.	20	Edmund K. and Mart.	
Th.	21	$\uparrow$	
F.	22	Cecilia.	
Sa.	23	St. Clement.	
Sun.	24	24 <sup>th</sup> Sunday after Trinity.	
M.	25	D. of Glo. b. Cath. In 15 d.	
Tu.	26	[of St. Mart. 4 ret.	
W.	27		
Th.	28	Mich <sup>s</sup> . Term ends.	
F.	29		
Sa.	30	St. Andrew.	



Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. Sub.	Diff.
		Longitude.	R <sup>t</sup> . Ascen. in Time.	Declin. South.		
		S. D. M. 8.	H. M. S.	D. M. S.		
F.	1	7. 8. 38. 34	14. 25. 1, 5	14. 23. 50	16. 13, 9	
Sa.	2	7. 9. 38. 42	14. 28. 57, 1	14. 43. 1	16. 14, 9	1, 0
Sun.	3	7. 10. 38. 52	14. 32. 53, 4	15. 1. 58	16. 15, 1	0, 2
M.	4	7. 11. 39. 4	14. 36. 50, 5	15. 20. 40	16. 14, 5	0, 6
Tu.	5	7. 12. 39. 17	14. 40. 48, 5	15. 39. 7	16. 13, 1	1, 4
W.	6	7. 13. 39. 32	14. 44. 47, 3	15. 57. 18	16. 10, 9	2, 2
Th.	7	7. 14. 39. 49	14. 48. 46, 9	16. 15. 14	16. 7, 9	3, 0
F.	8	7. 15. 40. 7	14. 52. 47, 3	16. 32. 52	16. 4, 0	3, 9
Sa.	9	7. 16. 40. 27	14. 56. 48, 7	16. 50. 15	15. 59, 2	4, 8
Sun.	10	7. 17. 40. 50	15. 0. 50, 8	17. 7. 20	15. 53, 6	5, 6
M.	11	7. 18. 41. 14	15. 4. 53, 9	17. 24. 7	15. 47, 2	6, 4
Tu.	12	7. 19. 41. 40	15. 8. 57, 7	17. 40. 37	15. 39, 9	7, 3
W.	13	7. 20. 42. 8	15. 13. 2, 5	17. 56. 48	15. 31, 7	8, 2
Th.	14	7. 21. 42. 38	15. 17. 8, 2	18. 12. 41	15. 22, 6	9, 1
F.	15	7. 22. 43. 10	15. 21. 14, 7	18. 28. 14	15. 12, 7	9, 9
Sa.	16	7. 23. 43. 43	15. 25. 22, 1	18. 43. 28	15. 1, 9	10, 8
Sun.	17	7. 24. 44. 19	15. 29. 30, 3	18. 58. 22	14. 50, 2	11, 7
M.	18	7. 25. 44. 57	15. 33. 39, 4	19. 12. 56	14. 50, 2	12, 5
Tu.	19	7. 26. 45. 36	15. 37. 49, 4	19. 27. 9	14. 37, 7	13, 4
W.	20	7. 27. 46. 16	15. 42. 0, 2	19. 41. 0	14. 24, 5	14, 2
Th.	21	7. 28. 46. 59	15. 46. 11, 8	19. 54. 31	14. 10, 1	15, 0
F.	22	7. 29. 47. 43	15. 50. 24, 2	20. 7. 40	13. 55, 1	15, 8
Sa.	23	8. 0. 48. 27	15. 54. 37, 4	20. 20. 36	13. 39, 3	15, 8
Sun.	24	8. 1. 49. 14	15. 58. 51, 3	20. 32. 50	13. 22, 7	16, 6
M.	25	8. 2. 50. 2	16. 3. 6, 1	20. 44. 51	13. 5, 3	17, 4
Tu.	26	8. 3. 50. 50	16. 7. 21, 6	20. 56. 28	12. 47, 2	18, 1
W.	27	8. 4. 51. 40	16. 11. 37, 8	21. 7. 42		18, 8
Th.	28	8. 5. 52. 30	16. 15. 54, 7	21. 18. 32	12. 28, 4	19, 6
F.	29	8. 6. 53. 22	16. 20. 12, 2	21. 28. 57	12. 8, 8	20, 3
Sa.	30	8. 7. 54. 14	16. 24. 30, 5	21. 38. 58	11. 48, 5	21, 0
					11. 27, 5	21, 6
					11. 5, 9	

Days	Time of $\odot$ 's pass <sup>s</sup> Merid.	THE SUN'S			Place of the $\odot$ 's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 7	16. 9, 5	2. 30, 3	9. 996340	9. 10. 27
7	1. 7, 4	16. 10, 9	2. 30, 8	9. 995685	9. 10. 8
13	1. 8, 1	16. 12, 3	2. 31, 2	9. 995104	9. 9. 49
19	1. 8, 8	16. 13, 5	2. 31, 6	9. 994575	9. 9. 30
25	1. 9, 5	16. 14, 6	2. 32, 0	9. 994083	9. 9. 10

ECLIPSES of the SATELLITES of JUPITER.  
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions,</i>		<i>Emerfions:</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	14. 22. 7	2	10. 21. 16	3	18. 54. 33 Im.
4	8. 50. 45	5	23. 39. 24	3	21. 26. 59 E.
6	3. 19. 18	9	12. 58. 35	10	22. 54. 2 Im.
7	21. 47. 55			11	1. 27. 22 E.
9	16. 16. 28				

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.		
8 MERCURY. sup. $\delta 6^{\circ} 3^h$ .						
1	6.28. 8	2.10 N	7. 5.28	0.40 N	12.44 S	23.51
4	7. 7.28	1. 3 N	7.10.21	0.19 N	14.39	23.58
7	7.16.21	0. 3. S	7.15.12	0. 1 S	16.26	0. 2
10	7.24.56	1. 50	7.19.59	0.21	18. 5	0. 9
13	8. 3.18	2. 5	7.24.43	0.40	19.37	0.16
16	8.11.33	3. 2	7.29.25	0.59	21. 1	0.23
19	8.19.48	3.54	8. 4. 5	1.16	22.14	0.30
22	8.28. 7	4.42	8. 8.44	1.33	23.19	0.37
25	9. 6.37	5.25	8.13.21	1.47	24.12	0.44
28	9.15.22	6. 2	8.17.56	1.59	24.54	0.51
30	9.21.25	6.22	8.20.59	2. 6	25.15	0.56
9 VENUS.						
1	10.19.11	3. 3 S	8.18.26	1.59 S	24.57 S	2.44
7	10.28.41	3.15	8.25.34	2.12	25.35	2.52
13	11. 8.12	3.22	9. 2.40	2.22	25.48	2.59
19	11.17.43	3.23	9. 9.42	2.28	25.35	3. 5
25	11.27.15	3.19	9.16.43	2.31	24.55	3.11
8 MARS.						
1	8.19.22	0.58 S	8. 3. 8	0.37 S	21.24 S	1.39
7	8.22.44	1. 3	8. 7.30	0.40	22.14	1.34
13	8. 26.9	1. 8	8.11.55	0.43	22.57	1.28
19	8.29.36	1.14	8.16.22	0.46	23.32	1.23
25	9. 3. 4	1.18	8.20.51	0.48	23.57	1.17
4 JUPITER.						
1	8.14.16	0.32 N	8. 8.52	0.28 N	21.21 S	2. 4
7	8.14.45	0.32	8.10. 8	0.27	21.33	1.45
13	8.15.13	0.31	8.11.26	0.27	21.44	1.27
19	8.15.42	0.31	8.12.45	0.26	21.56	1. 7
25	8.16.11	0.30	8.14. 6	0.25	22. 6	0.48
6 SATURN.						
1	6.19.48	2.30 N	6.21.32	2.17 N	6.18 S	22.55
7	6.20. 0	2.30	6.22.14	2.17	6.33	22.34
13	6.20.12	2.30	6.22.55	2.18	6.48	22.12
19	6.20.23	2.30	6.23.35	2.18	7. 1	21.50
25	6.20.35	2.30	6.24.14	2.19	7.15	21.27
8 GEORGIAN.						
1	6.21.33	0.36 N	6.22.24	0.34 N	8.12 S	22.55
11	6.21.41	0.36	6.23. 0	0.34	8.25	22.17
21	6.21.48	0.36	6.23.34	0.35	8.38	21.38

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
F.	1	10. 29. 18. 23	11. 5. 31. 47	3. 54. 2 N	4. 14. 2 N
Sa.	2	11. 11. 50. 28	11. 18. 14. 50	4. 31. 12	4. 45. 15
Sun.	3	11. 24. 45. 12	0. 1. 21. 46	4. 55. 50	5. 2. 40
M.	4	0. 8. 4. 37	0. 14. 53. 43	5. 5. 28	5. 4. 0
Tu.	5	0. 21. 48. 47	0. 28. 49. 28	4. 58. 4	4. 47. 36
W.	6	1. 5. 55. 13	1. 13. 5. 24	4. 32. 36	4. 13. 9
Th.	7	1. 20. 19. 14	1. 27. 35. 52	3. 49. 28	3. 21. 53
F.	8	2. 4. 54. 27	2. 12. 14. 4	2. 50. 48	2. 16. 47
Sa.	9	2. 19. 33. 52	2. 26. 53. 3	1. 40. 27	1. 2. 26 N
Sun.	10	3. 4. 10. 54	3. 11. 26. 49	0. 23. 29 N	0. 15. 44 S
M.	11	3. 18. 40. 19	3. 25. 51. 0	0. 54. 30 S	1. 32. 11
Tu.	12	4. 2. 58. 36	4. 10. 2. 54	2. 8. 10	2. 41. 53
W.	13	4. 17. 3. 47	4. 24. 1. 12	3. 12. 54	3. 40. 47
Th.	14	5. 0. 55. 11	5. 7. 45. 42	4. 5. 12	4. 25. 54
F.	15	5. 14. 32. 50	5. 21. 16. 37	4. 42. 39	4. 55. 21
Sa.	16	5. 27. 57. 6	6. 4. 34. 20	5. 3. 55	5. 8. 21
Sun.	17	6. 11. 8. 20	6. 17. 39. 12	5. 8. 39	5. 4. 57
M.	18	6. 24. 6. 54	7. 0. 31. 26	4. 57. 23	4. 46. 7
Tu.	19	7. 6. 52. 51	7. 13. 11. 9	4. 31. 22	4. 13. 23
W.	20	7. 19. 26. 22	7. 25. 38. 34	3. 52. 30	3. 28. 59
Th.	21	8. 1. 47. 48	8. 7. 54. 11	3. 3. 11	2. 35. 25
F.	22	8. 13. 57. 52	8. 19. 59. 3	2. 6. 4	1. 35. 26
Sa.	23	8. 25. 57. 56	9. 1. 54. 51	1. 3. 54 S	0. 31. 48 S
Sun.	24	9. 7. 50. 10	9. 13. 44. 15	0. 0. 32 N	0. 32. 48 N
M.	25	9. 19. 37. 31	9. 25. 30. 31	1. 4. 40	1. 35. 50
Tu.	26	10. 1. 23. 44	10. 7. 17. 44	2. 6. 2	2. 34. 58
W.	27	10. 13. 13. 8	10. 19. 10. 32	3. 2. 22	3. 27. 56
Th.	28	10. 25. 10. 35	11. 1. 13. 53	3. 51. 26	4. 12. 33
F.	29	11. 7. 21. 6	11. 13. 32. 50	4. 31. 2	4. 46. 36
Sa.	30	11. 19. 49. 41	11. 26. 12. 10	4. 58. 58	5. 7. 51

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	11	7. 49	330. 3	335. 47	8. 4 S	5. 33 S
Sa.	2	12	8. 32	341. 32	347. 20	2. 57 S	0. 17 S
Sun.	3	13	9. 17	353. 14	359. 14	2. 26 N	5. 10 N
M.	4	14	10. 5	5. 23	11. 43	7. 53	10. 33
Tu.	5	15	10. 55	18. 15	25. 1	13. 7	15. 33
W.	6	16	11. 50	32. 1	39. 17	17. 48	19. 48
Th.	7	17	12. 50	46. 47	54. 30	21. 31	22. 55
F.	8	18	13. 52	62. 23	70. 25	23. 56	24. 32
Sa.	9	19	14. 55	78. 30	86. 34	24. 43	24. 28
Sun.	10	20	15. 56	94. 34	102. 25	23. 47	22. 43
M.	11	21	16. 54	110. 5	117. 33	21. 15	19. 29
Tu.	12	22	17. 48	124. 46	131. 45	17. 26	15. 9
W.	13	23	18. 38	138. 32	145. 6	12. 40	10. 4
Th.	14	24	19. 26	151. 31	157. 47	7. 21	4. 34 N
F.	15	25	20. 12	163. 57	170. 3	1. 45 N	1. 4 S
Sa.	16	26	20. 58	176. 6	182. 9	3. 50 S	6. 32
Sun.	17	27	21. 44	188. 12	194. 18	9. 8	11. 37
M.	18	28	22. 31	200. 27	206. 40	13. 58	16. 8
Tu.	19	29	23. 20	212. 59	219. 23	18. 5	19. 50
W.	20	1	6	225. 51	232. 24	21. 20	22. 34
Th.	21	2	0. 10	239. 1	245. 40	23. 32	24. 12
F.	22	3	1. 1	252. 20	258. 58	24. 35	24. 40
Sa.	23	4	1. 51	265. 34	272. 6	24. 28	23. 59
Sun.	24	5	2. 40	278. 32	284. 52	23. 13	22. 13
M.	25	6	3. 28	291. 5	297. 10	20. 57	19. 29
Tu.	26	7	4. 13	303. 9	309. 1	17. 49	15. 58
W.	27	8	4. 56	314. 48	320. 30	13. 57	11. 48
Th.	28	9	5. 38	326. 9	331. 46	9. 31	7. 7
F.	29	10	6. 20	337. 22	343. 0	4. 37 S	2. 4 S
Sa.	30	11	7. 3	348. 42	354. 28	0. 33 N	3. 12 N

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
F.	1	15. 8	15. 13	55. 32	55. 52	5107	5081
Sa.	2	15. 19	15. 25	56. 13	56. 36	5054	5025
Sun.	3	15. 32	15. 39	57. 1	57. 26	4992	4961
M.	4	15. 46	15. 52	57. 51	58. 15	4930	4900
Tu.	5	15. 59	16. 5	58. 39	59. 2	4870	4842
W.	6	16. 11	16. 16	59. 22	59. 40	4817	4795
Th.	7	16. 20	16. 23	59. 56	60. 7	4776	4763
F.	8	16. 25	16. 27	60. 16	60. 21	4752	4746
Sa.	9	16. 27	16. 27	60. 23	60. 21	4743	4746
Sun.	10	16. 26	16. 23	60. 17	60. 9	4751	4760
M.	11	16. 21	16. 18	59. 59	59. 48	4772	4786
Tu.	12	16. 14	16. 10	59. 35	59. 20	4801	4820
W.	13	16. 6	16. 1	59. 4	58. 48	4839	4859
Th.	14	15. 57	15. 52	58. 31	58. 14	4880	4901
F.	15	15. 48	15. 43	57. 58	57. 41	4921	4942
Sa.	16	15. 39	15. 34	57. 25	57. 9	4962	4983
Sun.	17	15. 30	15. 26	56. 53	56. 37	5003	5023
M.	18	15. 22	15. 18	56. 22	56. 8	5042	5060
Tu.	19	15. 14	15. 10	55. 54	55. 41	5079	5095
W.	20	15. 7	15. 3	55. 28	55. 15	5112	5129
Th.	21	15. 0	14. 57	55. 3	54. 52	5145	5159
F.	22	14. 55	14. 52	54. 43	54. 34	5171	5183
Sa.	23	14. 50	14. 48	54. 26	54. 20	5194	5202
Sun.	24	14. 47	14. 46	54. 16	54. 13	5207	5211
M.	25	14. 46	14. 46	54. 12	54. 13	5213	5211
Tu.	26	14. 47	14. 49	54. 16	54. 22	5207	5199
W.	27	14. 51	14. 54	54. 30	54. 40	5189	5175
Th.	28	14. 57	15. 1	54. 52	55. 8	5159	5138
F.	29	15. 6	15. 12	55. 26	55. 46	5115	5089
Sa.	30	15. 18	15. 25	56. 9	56. 33	5059	5028

*DISTANCES of MOON's Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	1	65. 21. 34	63. 49. 16	62. 16. 42	60. 43. 50	59. 10. 42	57. 37. 12	56. 3. 27	54. 29. 23	53. 10. 14	51. 29. 4	50. 43. 50	49. 47. 38	48. 5. 55	47. 25. 56	46. 34. 40	45. 59
	2	52. 55. 4	51. 20. 26	49. 45. 29	48. 10. 14	46. 34. 40	44. 58. 45	43. 22. 32	41. 45. 59	39. 33. 52	37. 50. 53	36. 7. 53	34. 24. 52	32. 41. 50	30. 58. 54	29. 16. 7	27. 33. 30
	3	40. 9. 7	38. 29. 17	36. 41. 46	34. 54. 31	33. 7. 32	31. 20. 51	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27	23. 13. 58	21. 13. 57	19. 46. 29	18. 17. 4	16. 48. 20	15. 48. 20
Aldebaran	3	72. 58. 28	71. 21. 22	69. 43. 54	68. 6. 5	66. 27. 55	64. 49. 24	63. 10. 32	61. 31. 19	59. 10. 42	57. 37. 12	56. 3. 27	54. 29. 23	53. 10. 14	51. 29. 4	50. 43. 50	49. 47. 38
	4	59. 51. 46	58. 11. 52	56. 31. 38	54. 51. 6	53. 10. 14	51. 29. 4	49. 47. 38	48. 5. 55	46. 34. 40	44. 58. 45	43. 22. 32	41. 45. 59	39. 33. 52	37. 50. 53	36. 7. 53	34. 24. 52
	5	46. 23. 57	44. 41. 42	42. 59. 16	41. 16. 39	39. 33. 52	37. 50. 53	36. 7. 53	34. 24. 52	32. 41. 50	30. 58. 54	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27	23. 13. 58	21. 13. 57
Pollux.	6	32. 41. 50	30. 58. 54	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27	23. 13. 58	21. 13. 57	19. 46. 29	18. 17. 4	16. 48. 20	15. 48. 20	14. 39. 23	13. 30. 10	12. 21. 5	11. 13. 57
	7	60. 0. 55	58. 13. 20	56. 25. 39	54. 37. 51	52. 49. 57	51. 1. 58	49. 13. 57	47. 25. 56	46. 34. 40	44. 58. 45	43. 22. 32	41. 45. 59	39. 33. 52	37. 50. 53	36. 7. 53	34. 24. 52
	8	45. 37. 53	43. 49. 53	42. 1. 57	40. 14. 6	38. 26. 22	36. 41. 46	34. 54. 31	33. 7. 32	31. 20. 51	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27	23. 13. 58	21. 13. 57	19. 46. 29
Regulus.	8	67. 34. 8	65. 44. 15	63. 54. 26	62. 4. 41	60. 14. 59	58. 25. 22	56. 35. 52	54. 46. 29	53. 10. 14	51. 29. 4	50. 43. 50	49. 47. 38	48. 5. 55	47. 25. 56	46. 34. 40	45. 59
	9	52. 57. 13	51. 8. 6	49. 19. 8	47. 30. 21	45. 41. 43	43. 53. 17	42. 5. 4	40. 17. 4	38. 29. 17	36. 41. 46	34. 54. 31	33. 7. 32	31. 20. 51	29. 16. 7	27. 33. 30	25. 51. 8
	10	38. 29. 17	36. 41. 46	34. 54. 31	33. 7. 32	31. 20. 51	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27	23. 13. 58	21. 13. 57	19. 46. 29	18. 17. 4	16. 48. 20	15. 48. 20	14. 39. 23
Spica ♀	11	78. 5. 41	76. 19. 11	74. 32. 55	72. 46. 52	70. 61. 19	68. 15. 40	66. 27. 55	64. 49. 24	63. 10. 32	61. 31. 19	59. 10. 42	57. 37. 12	56. 3. 27	54. 29. 23	53. 10. 14	51. 29. 4
	12	64. 0. 15	62. 15. 40	60. 31. 19	58. 47. 14	56. 6. 5	54. 51. 6	53. 10. 14	51. 29. 4	49. 47. 38	48. 5. 55	47. 25. 56	46. 34. 40	45. 59	44. 58. 45	43. 22. 32	41. 45. 59
	13	50. 41. 50	48. 11. 52	46. 31. 38	44. 51. 6	43. 10. 14	41. 16. 39	39. 33. 52	37. 50. 53	36. 7. 53	34. 24. 52	32. 41. 50	30. 58. 54	29. 16. 7	27. 33. 30	25. 51. 8	24. 29. 27

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	11	120. 0. 40	118. 20. 12	116. 39. 55	114. 59. 49	113. 19. 55	111. 40. 13	110. 0. 43	108. 21. 26								
	12	106. 42. 21	105. 3. 30	103. 24. 53	101. 46. 30	100. 8. 20	98. 30. 24	96. 52. 42	95. 15. 14								
	13	93. 38. 0	92. 1. 1	90. 24. 17	88. 47. 47	87. 11. 32	85. 35. 30	83. 59. 43	82. 24. 10								
	14	80. 48. 52	79. 13. 49	77. 39. 0	76. 4. 25	74. 30. 4	72. 55. 57	71. 22. 4	69. 48. 24								
	15	68. 14. 59	66. 41. 47	65. 8. 49	63. 36. 5	62. 3. 34	60. 31. 17	58. 59. 12	57. 27. 22								
	16	55. 55. 44	54. 24. 20	52. 53. 8	51. 22. 10	49. 51. 24	48. 20. 51	46. 50. 32	45. 20. 24								
	17	43. 50. 30	42. 20. 48	40. 51. 18	39. 22. 1	37. 52. 56											
Fomalhaut.	22	-	-	-	-	71. 51. 29	70. 30. 57	69. 10. 41	67. 50. 43								
	23	66. 31. 3	65. 11. 42	63. 52. 43	62. 34. 5	61. 15. 49	59. 57. 55	58. 40. 26	57. 23. 24								
	24	56. 6. 48	54. 50. 41	53. 35. 5	52. 20. 0	51. 5. 28											
α Pegasi.	24	-	-	-	-	68. 13. 40	66. 48. 14	65. 22. 55	63. 57. 41								
	25	62. 32. 35	61. 7. 35	59. 42. 43	58. 17. 58	56. 53. 21	55. 28. 51	54. 4. 30	52. 40. 17								
	26	51. 16. 12	49. 52. 15	48. 28. 29	47. 4. 54	45. 41. 30	44. 18. 19	42. 55. 22	41. 32. 39								
	27	40. 10. 11															
α Arietis.	27	81. 20. 34	79. 51. 43	78. 22. 45	76. 53. 40	75. 24. 26	73. 55. 4	72. 25. 33	70. 55. 58								
	28	69. 26. 3	67. 56. 3	66. 25. 51	64. 55. 28	63. 24. 53	61. 54. 5	60. 23. 4	58. 51. 49								
	29	57. 20. 20	55. 48. 37	54. 16. 38	52. 44. 24	51. 11. 54	49. 39. 8	48. 6. 5	46. 32. 46								
	30	44. 59. 8															
Aldebaran.	30	77. 51. 16	76. 17. 26	74. 43. 24	73. 8. 57	71. 34. 12	69. 59. 6	68. 23. 39	66. 47. 51								
	D. 1	65. 11. 41															



*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .	Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	110. 36. 49		112. 1. 48	113. 27. 5			114. 52. 39	116. 18. 30	117. 44. 40			119. 11. 8		120. 37. 55	
	2	122. 5. 2														
Antares.	1	82. 36. 30		84. 9. 16	85. 42. 20			87. 15. 41	88. 49. 20	90. 23. 18			91. 57. 35		93. 32. 11	
	2	95. 7. 7		96. 42. 23	98. 18. 0			99. 53. 58	101. 30. 17							
α Aquilæ.	2	- - -		- - -	- - -			- - -	52. 32. 28	53. 51. 32			55. 11. 32		56. 32. 27	
	3	57. 54. 13		59. 16. 51	60. 40. 15			62. 4. 26	63. 29. 23	64. 55. 2			66. 21. 21		67. 48. 20	
	4	69. 15. 59		70. 44. 15	72. 13. 4			73. 42. 28	75. 12. 25	76. 42. 53			78. 13. 50		79. 45. 15	
	5	81. 17. 9		82. 49. 27	84. 22. 10			85. 55. 15	87. 28. 42							
	5	- - -		- - -	- - -			- - -	39. 49. 24	41. 26. 54			43. 5. 12		44. 44. 16	
α Pegasi.	6	46. 24. 2		48. 4. 30	49. 45. 32			51. 27. 10	53. 9. 22	54. 52. 2			56. 35. 10		58. 18. 40	
	7	60. 2. 38		61. 46. 56	63. 31. 33			65. 16. 28	67. 1. 42	68. 47. 11			70. 32. 53		72. 18. 47	
α Arctis.	8	74. 4. 53														
	8	30. 34. 47		32. 23. 3	34. 11. 32			36. 0. 13	37. 49. 4	39. 38. 4			41. 27. 10		43. 16. 22	
Aldebaran.	9	45. 5. 39		46. 54. 57	48. 44. 16			50. 33. 36	52. 22. 55							
	9	- - -		- - -	- - -			- - -	20. 49. 10	22. 31. 1			24. 13. 42		25. 57. 6	
	10	27. 41. 10		29. 25. 50	31. 10. 51			32. 56. 14	34. 41. 57	36. 27. 43			38. 13. 33		39. 59. 29	
	11	41. 45. 30		43. 31. 27	45. 17. 21			47. 3. 12	48. 49. 0	50. 34. 41			52. 20. 13		54. 5. 39	
	12	55. 50. 56		57. 36. 3	59. 20. 59			61. 5. 45	62. 50. 21	64. 34. 45			66. 18. 57		68. 2. 56	
	13	69. 46. 44		71. 30. 19	73. 13. 40			74. 56. 49	76. 39. 43							

Stars Names.	Days	Noon.	III <sup>h</sup> .	VI <sup>h</sup> .	IX <sup>h</sup> .	Midnight.	XV <sup>h</sup> .	XVIII <sup>h</sup> .	XXI <sup>h</sup> .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	13	- - -	- - -	- - -	- - -	34.58.33	36.39.37	38.20.37	40.1.33
	14	41.42.25	43.23.12	45.3.51	46.44.24	48.24.50	50.5.7	51.45.14	53.25.12
	15	55.5.1	56.44.40	58.24.8	60.3.25	61.42.31			
Regulus.	15	- - -	- - -	- - -	- - -	24.42.18	26.20.52	27.59.21	29.37.46
	16	31.16.5	32.54.18	34.32.24	36.10.22	37.48.13	39.25.54	41.3.25	42.40.48
	17	44.18.1	45.55.5	47.31.59	49.8.43	50.45.17	52.21.41	53.57.55	55.32.59
	18	57.9.53	58.45.36	60.21.9	61.56.32	63.31.44	65.6.46	66.41.39	68.16.21
	19	69.50.53							
The Sun.	24	- - -	- - -	38.42.58	40.3.55	41.24.48	42.45.39	44.6.29	45.27.17
	25	46.48.3	48.8.49	49.29.35	50.50.21	52.11.7	53.31.53	54.52.41	56.13.31
	26	57.34.22	58.55.15	60.16.12	61.37.12	62.58.16	64.19.24	65.40.38	67.1.58
	27	68.23.23	69.44.55	71.6.34	72.28.22	73.50.17	75.12.21	76.34.35	77.56.59
	28	79.19.33	80.42.18	82.5.15	83.28.25	84.51.47	86.15.23	87.39.13	89.3.19
	29	90.27.39	91.52.15	93.17.8	94.42.18	96.7.45	97.33.30	98.59.35	100.25.59
	30	101.52.42	103.19.46	104.47.10	106.14.57	107.43.4	109.11.34	110.40.27	112.9.43
	D.1	113.39.22							
	29	90.39.18	92.11.33	93.44.4	95.16.52	96.49.57	98.23.21	99.57.3	101.31.5
	30	103.5.26							
Antares.									
α Aquilæ.	30	53.43.56	55.2.10	56.21.15	57.41.9	59.1.52	60.23.22	61.45.36	63.8.33
	D.1	64.32.15							

CONFIGURATIONS of the SATELLITES of JUPITER  
at V o'Clock in the *Evening*.

1			.1	○	.2 .3
2	4.			○	2. 1. 3.
3	.4		.2 .1	○	2.
4	.4		3.	○	1. .2
5	1.○	.4 3.		○	2.
6		.3 .4 2. 1.		○	
7	4.6		.2 .3	○	.1
8		1.		○	.2 3 6 4
9				○	2. 1. 3. .4
10		2.	.1	○	3. .4

# I. DECEMBER 1805. 133

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			○ Full Moon	6. 1. 7
			☾ Last Quarter	12. 16. 36
			● New Moon	20. 12. 8
			☽ First Quarter	28. 16. 18
			Other Phenomena.	
			D. H. M.	
Sun.	1	Advent Sunday.	2. 14. 20	☽ ♄ ♀
M.	2		4. 22. 4	☽ ♄ Pleiadum.
Tu.	3		6. 15. 0	☽ ♄ 125 ♀
W.	4		6. 18. 18	☽ ♄ 132 ♀
Th.	5		7. 6. 44	☽ ♄ ♀
F.	6	Nicholas.	8. 3. 51	☽ ♄ ♀
Sa.	7		10. 9. 55	☽ ♄ ♀
Sun.	8	2d Sun. in Adv. Concep-	10. 14. 16	☽ ♄ ♀
M.	9	[tion of V. Mary.	10. 22. 47	☽ ♄ ♀
Tu.	10		12. 16. 49½	☽ ♄ ♀
W.	11		12. 18. 3½	☽ ♄ ♀
Th.	12		18. 2. 23	☽ ♄ ♀
F.	13	Lucy.	18. 12. 44	☽ ♄ ♀
Sa.	14		20. - -	☽ eclipsed, invisible.
Sun.	15	3d Sun. in Advent.	21. 17. 14	☽ enters ♄
M.	16	O Sap. Camb. Ter. ends.	23. - -	☽ ♄ ♀, * 49' S.
Tu.	17	Oxford Term ends.	25. - -	☽ ♄ ♀, * 57' S.
W.	18		26. - -	☽ Stationary.
Th.	19		29. 23. 34	☽ ♄ ♀
F.	20		30. - -	☽ ♄ ♀, * 49' S.
Sa.	21	St. Thomas.		
Sun.	22	4th Sunday in Advent.		
M.	23			
Tu.	24			
W.	25	Christmas-Day.		
Th.	26	St. Stephen.		
F.	27	St. John.		
Sa.	28	Innocent.		
Sun.	29	1st Sun. after Christmas.		
M.	30			
Tu.	31	Silvester.		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascen.	Declin.		
			<i>in Time.</i>	<i>South.</i>	<i>Sub.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	8. 8. 55. 7	16. 28. 49, 4	21. 48. 34	10. 43, 6	
M.	2	8. 9. 56. 1	16. 33. 8, 9	21. 57. 45	10. 20, 7	22, 9
Tu.	3	8. 10. 56. 56	16. 37. 29, 0	22. 6. 31	9. 57, 2	23, 5
W.	4	8. 11. 57. 52	16. 41. 49, 8	22. 14. 50	9. 33, 1	24, 1
Th.	5	8. 12. 58. 48	16. 46. 11, 0	22. 22. 44	9. 8, 4	24, 7
						25, 2
F.	6	8. 13. 59. 46	16. 50. 32, 9	22. 30. 12	8. 43, 2	
Sa.	7	8. 15. 0. 44	16. 54. 55, 2	22. 37. 14	8. 17, 5	25, 7
Sun.	8	8. 16. 1. 44	16. 59. 18, 1	22. 43. 48	7. 51, 2	26, 3
M.	9	8. 17. 2. 45	17. 3. 41, 4	22. 49. 56	7. 24, 5	26, 7
Tu.	10	8. 18. 3. 46	17. 8. 5, 2	22. 55. 37	6. 57, 4	27, 1
						27, 6
W.	11	8. 19. 4. 49	17. 12. 29, 5	23. 0. 51	6. 29, 8	
Th.	12	8. 20. 5. 52	17. 16. 54, 1	23. 5. 38	6. 1, 8	28, 0
F.	13	8. 21. 6. 57	17. 21. 19, 1	23. 9. 57	5. 33, 4	28, 4
Sa.	14	8. 22. 8. 2	17. 25. 44, 4	23. 13. 48	5. 4, 7	28, 7
Sun.	15	8. 23. 9. 9	17. 30. 10, 1	23. 17. 11	4. 35, 7	29, 0
						29, 3
M.	16	8. 24. 10. 17	17. 34. 36, 0	23. 20. 7	4. 6, 4	
Tu.	17	8. 25. 11. 25	17. 39. 2, 2	23. 22. 34	3. 36, 9	29, 5
W.	18	8. 26. 12. 34	17. 43. 28, 5	23. 24. 34	3. 7, 1	29, 8
Th.	19	8. 27. 13. 44	17. 47. 55, 1	23. 26. 5	2. 37, 2	29, 9
F.	20	8. 28. 14. 55	17. 52. 21, 8	23. 27. 8	2. 7, 2	30, 0
						30, 1
Sa.	21	8. 29. 16. 5	17. 56. 48, 5	23. 27. 42	1. 37, 1	
Sun.	22	9. 0. 17. 16	18. 1. 15, 3	23. 27. 48	1. 6, 9	30, 2
M.	23	9. 1. 18. 28	18. 5. 42, 2	23. 27. 26	0. 36, 7	30, 2
Tu.	24	9. 2. 19. 40	18. 10. 8, 9	23. 26. 36	0. 6, 6	30, 1
W.	25	9. 3. 20. 51	18. 14. 35, 7	23. 25. 17	Add. 23, 5	30, 1
						30, 0
Th.	26	9. 4. 22. 3	18. 19. 2, 3	23. 23. 30	0. 53, 5	
F.	27	9. 5. 23. 15	18. 23. 28, 8	23. 21. 17	1. 23, 3	29, 8
Sa.	28	9. 6. 24. 26	18. 27. 55, 0	23. 18. 30	1. 53, 0	29, 7
Sun.	29	9. 7. 25. 37	18. 32. 21, 1	23. 15. 19	2. 22, 5	29, 5
M.	30	9. 8. 26. 48	18. 36. 47, 0	23. 11. 39	2. 51, 7	29, 2
						28, 9
Tu.	31	9. 9. 27. 59	18. 41. 12, 5	23. 7. 32	3. 20, 6	

Days	Time of ☉'s Semidiam. pass'g Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10, 1	16. 15, 5	2. 32, 2	9. 993642	9. 8. 51
7	1. 10, 5	16. 16, 3	2. 32, 5	9. 993282	9. 8. 32
13	1. 10, 8	16. 17, 0	2. 32, 7	9. 993016	9. 8. 13
19	1. 11, 0	16. 17, 4	2. 32, 8	9. 992829	9. 7. 54
25	1. 11, 0	16. 17, 7	2. 32, 9	9. 992699	9. 7. 35

The ECLIPSES of JUPITER'S SATELLITES

are *not visible* this Month,

JUPITER being *too near* the SUN.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.			D. M.
♿ MERCURY. Gr. Elong. 19°.							
1	9. 24. 30	6. 31 S	8. 22. 30	2. 9 S	25. 24 S	0. 58	
4	10. 4. 8	6. 51	8. 27. 2	2. 16	25. 42	1. 5	
7	10. 14. 24	7. 0	9. 1. 29	2. 19	25. 47	1. 12	
10	10. 25. 26	6. 54	9. 5. 50	2. 18	25. 38	1. 18	
13	11. 7. 25	6. 31	9. 10. 0	2. 11	25. 16	1. 23	
16	11. 20. 30	5. 47	9. 13. 52	1. 57	24. 41	1. 27	
19	0. 4. 51	4. 37	9. 17. 16	1. 36	23. 57	1. 29	
22	0. 20. 33	3. 1	9. 19. 55	1. 5	23. 3	1. 25	
25	1. 7. 34	1. 2 S	9. 21. 28	0. 23 S	22. 8	1. 18	
28	1. 25. 43	1. 11 N	9. 21. 33	0. 28 N	21. 17	1. 4	
31	2. 14. 32	3. 21	9. 19. 53	1. 26	20. 35	0. 44	
♀ VENUS.							
1	0. 6. 48	3. 9 S	9. 23. 40	2. 31 S	23. 51 S	3. 15	
7	0. 16. 22	2. 54	10. 0. 31	2. 25	22. 25	3. 18	
13	0. 25. 57	2. 34	10. 7. 16	2. 15	20. 39	3. 20	
19	1. 5. 33	2. 9	10. 13. 54	2. 0	18. 35	3. 20	
25	1. 15. 10	1. 41	10. 20. 22	1. 39	16. 17	3. 19	
♂ MARS.							
1	9. 6. 35	1. 23 S	8. 25. 21	0. 51 S	24. 14 S	1. 11	
7	9. 10. 8	1. 28	8. 29. 55	0. 53	24. 21	1. 5	
13	9. 13. 42	1. 32	9. 4. 30	0. 55	24. 18	0. 58	
19	9. 17. 18	1. 35	9. 9. 6	0. 57	24. 6	0. 52	
25	9. 20. 56	1. 39	9. 13. 44	0. 59	23. 44	0. 46	
♃ JUPITER. Gr. Elong. 69° 62'.							
1	8. 16. 40	0. 29 N	8. 15. 27	0. 25 N	22. 15 S	0. 28	
7	8. 17. 8	0. 29	8. 16. 48	0. 24	22. 24	0. 8	
13	8. 17. 37	0. 28	8. 18. 10	0. 24	22. 33	23. 44	
19	8. 18. 6	0. 28	8. 19. 31	0. 23	22. 40	23. 23	
25	8. 18. 35	0. 27	8. 20. 53	0. 23	22. 47	23. 2	
♄ SATURN.							
1	6. 20. 47	2. 30 N	6. 24. 50	2. 20 N	7. 28 S	21. 3	
7	6. 20. 58	2. 30	6. 25. 25	2. 21	7. 39	20. 39	
13	6. 21. 10	2. 30	6. 25. 57	2. 22	7. 50	20. 15	
19	6. 21. 22	2. 30	6. 26. 26	2. 23	7. 59	19. 50	
25	6. 21. 33	2. 30	6. 26. 53	2. 25	8. 7	19. 25	
♅ GEORGIAN.							
1	6. 21. 56	0. 36 N	6. 24. 5	0. 35 N	8. 49 S	20. 58	
11	6. 22. 4	0. 36	6. 24. 32	0. 35	8. 59	20. 16	
21	6. 22. 11	0. 36	6. 24. 55	0. 35	9. 7	19. 33	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Sun.	1	0. 2. 40. 45		0. 9. 15. 49		5. 12. 58 N		5. 14. 6 N	
M.	2	0. 15. 57. 42		0. 22. 46. 31		5. 11. 1		5. 3. 31	
Tu.	3	0. 29. 42. 14		1. 6. 44. 43		4. 51. 29		4. 34. 54	
W.	4	1. 13. 53. 39		1. 21. 8. 31		4. 13. 47		3. 48. 18	
Th.	5	1. 28. 28. 34		2. 5. 53. 0		3. 18. 46		2. 45. 36	
F.	6	2. 13. 20. 52		2. 20. 51. 6		2. 9. 18		1. 30. 34	
Sa.	7	2. 28. 22. 35		3. 5. 54. 11		0. 50. 6 N		0. 8. 43 N	
Sun.	8	3. 13. 24. 51		3. 20. 53. 32		0. 32. 46 S		1. 13. 31 S	
M.	9	3. 28. 19. 20		4. 5. 41. 30		1. 52. 46		2. 29. 50	
Tu.	10	4. 12. 59. 22		4. 20. 12. 26		3. 4. 4		3. 34. 59	
W.	11	4. 27. 20. 23		5. 4. 22. 57		4. 2. 11		4. 25. 21	
Th.	12	5. 11. 20. 4		5. 18. 11. 44		4. 44. 19		4. 58. 55	
F.	13	5. 24. 58. 1		6. 1. 39. 7		5. 9. 9		5. 15. 3	
Sa.	14	6. 8. 15. 14		6. 14. 46. 38		5. 16. 41		5. 14. 12	
Sun.	15	6. 21. 13. 37		6. 27. 36. 30		5. 7. 45		4. 57. 33	
M.	16	7. 3. 55. 32		7. 10. 11. 5		4. 43. 49		4. 26. 49	
Tu.	17	7. 16. 23. 25		7. 22. 32. 50		4. 6. 48		3. 44. 3	
W.	18	7. 28. 39. 36		8. 4. 43. 58		3. 18. 53		2. 51. 37	
Th.	19	8. 10. 46. 8		8. 16. 46. 24		2. 22. 34		1. 52. 4	
F.	20	8. 22. 44. 56		8. 28. 42. 1		1. 20. 28		0. 48. 6 S	
Sa.	21	9. 4. 37. 50		9. 10. 32. 41		0. 15. 18 S		0. 17. 35 N	
Sun.	22	9. 16. 26. 46		9. 22. 20. 24		0. 50. 13 N		1. 22. 17	
M.	23	9. 28. 13. 53		10. 4. 7. 34		1. 53. 27		2. 23. 26	
Tu.	24	10. 10. 1. 48		10. 15. 56. 58		2. 51. 55		3. 18. 38	
W.	25	10. 21. 53. 31		10. 27. 51. 52		3. 43. 19		4. 5. 41	
Th.	26	11. 3. 52. 31		11. 9. 55. 57		4. 25. 30		4. 42. 31	
F.	27	11. 16. 2. 41		11. 22. 13. 17		4. 56. 29		5. 7. 12	
Sa.	28	11. 28. 28. 13		0. 4. 48. 4		5. 14. 25		5. 17. 56	
Sun.	29	0. 11. 13. 17		0. 17. 44. 21		5. 17. 34		5. 13. 9	
M.	30	0. 24. 21. 41		1. 1. 5. 34		5. 4. 32		4. 51. 37	
Tu.	31	1. 7. 56. 15		1. 14. 53. 50		4. 34. 22		4. 12. 51	



THE M O O N ' s								
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.		
				Noon.	Midnight.	Noon.	Midnight.	
		D.	H. M.	D. M.	D. M.	D. M.	D. M.	
Sun.	1	12	7. 47	0. 22	6. 25	5. 51 N	8. 29 N	
M.	2	13	8. 35	12. 40	19. 8	11. 4	13. 33	
Tu.	3	14	9. 27	25. 51	32. 49	15. 55	18. 6	
W.	4	15	10. 23	40. 5	47. 38	20. 4	21. 44	
Th.	5	16	11. 24	55. 26	63. 28	23. 4	24. 2	
F.	6	17	12. 28	71. 39	79. 56	24. 34	24. 39	
Sa.	7	18	13. 32	88. 13	96. 26	24. 17	23. 29	
Sun.	8	19	14. 34	104. 31	112. 24	22. 15	20. 38	
M.	9	20	15. 31	120. 2	127. 26	18. 41	16. 27	
Tu.	10	21	16. 24	134. 34	141. 27	14. 0	11. 22	
W.	11	22	17. 14	148. 8	154. 38	8. 37	5. 48	
Th.	12	23	18. 1	160. 59	167. 12	2. 57 N	0. 6 N	
F.	13	24	18. 47	173. 20	179. 25	2. 43 S	5. 28 S	
Sa.	14	25	19. 32	185. 28	191. 32	8. 8	10. 39	
Sun.	15	26	20. 18	197. 38	203. 47	13. 2	15. 15	
M.	16	27	21. 6	210. 0	216. 17	17. 17	19. 6	
Tu.	17	28	21. 55	222. 39	229. 6	20. 42	22. 2	
W.	18	29	22. 45	235. 38	242. 12	23. 7	23. 55	
Th.	19	30	23. 35	248. 48	255. 25	24. 26	24. 40	
F.	20	1	0	262. 1	268. 34	24. 36	24. 16	
Sa.	21	2	0. 24	275. 3	281. 27	23. 38	22. 45	
Sun.	22	3	1. 12	287. 44	293. 54	21. 37	20. 15	
M.	23	4	1. 58	299. 57	305. 52	18. 42	16. 56	
Tu.	24	5	2. 41	311. 41	317. 24	14. 59	12. 55	
W.	25	6	3. 23	323. 3	328. 38	10. 42	8. 23	
Th.	26	7	4. 4	334. 10	339. 42	5. 58	3. 29 S	
F.	27	8	4. 46	345. 15	350. 50	0. 57 S	1. 37 N	
Sa.	28	9	5. 28	356. 30	2. 17	4. 12 N	6. 46	
Sun.	29	10	6. 12	8. 12	14. 19	9. 19	11. 47	
M.	30	11	7. 0	20. 38	27. 11	14. 10	16. 25	
Tu.	31	12	7. 52	34. 0	41. 5	18. 29	20. 21	

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sat.	1	15.32	15.39	57. 0	57.27	4994	4960
M.	2	15.47	15.55	57.55	58.24	4924	4889
Tu.	3	16. 2	16.10	58.52	59.19	4854	4821
W.	4	16.17	16.24	59.46	60.10	4788	4759
Th.	5	16.29	16.34	60.30	60.46	4735	4716
F.	6	16.37	16.39	61. 0	61. 8	4699	4690
Sa.	7	16.41	16.41	61.13	61.12	4684	4685
Sun.	8	16.39	16.37	61. 7	60.58	4691	4702
M.	9	16.33	16.29	60.45	60.28	4717	4737
Tu.	10	16.24	16.18	60.10	59.49	4759	4784
W.	11	16.12	16. 6	59.27	59. 4	4811	4839
Th.	12	15.59	15.53	58.41	58.16	4867	4898
F.	13	15.46	15.40	57.52	57.29	4928	4957
Sa.	14	15.34	15.28	57. 8	56.47	4984	5010
Sun.	15	15.23	15.18	56.27	56. 8	5036	5060
M.	16	15.13	15. 9	55.51	55.35	5082	5103
Tu.	17	15. 5	15. 1	55.21	55. 8	5122	5138
W.	18	14.58	14.55	54.57	54.46	5153	5167
Th.	19	14.53	14.51	54.36	54.28	5181	5191
F.	20	14.49	14.47	54.22	54.16	5199	5207
Sa.	21	14.46	14.45	54.12	54. 9	5213	5217
Sun.	22	14.45	14.45	54. 7	54. 6	5219	5221
M.	23	14.45	14.45	54. 6	54. 8	5221	5218
Tu.	24	14.46	14.48	54.13	54.19	5211	5203
W.	25	14.50	14.53	54.26	54.36	5194	5181
Th.	26	14.56	15. 0	54.48	55. 2	5165	5146
F.	27	15. 4	15. 9	55.18	55.37	5125	5100
Sa.	28	15.15	15.21	55.58	56.21	5073	5044
Sun.	29	15.28	15.35	56.46	57.13	5012	4977
M.	30	15.43	15.51	57.41	58. 9	4942	4907
Tu.	31	15.59	16. 7	58.39	59. 8	4870	4834

*DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		V <sup>h</sup> .		IX <sup>a</sup> .		Midnight.	XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		D. M. S.	D. M. S.	D. M. S.	D. M. S.		
Aldebaran.	1	65.	11. 41	63.	35. 9	61.	58. 15	60.	20. 59	58. 43. 21	57. 5. 20	55. 26. 57	53. 48. 12			
	2	52.	9. 5	50. 29. 35	48. 49. 46	47. 9. 36	45. 29. 6	43. 48. 15	42. 7. 9	40. 25. 46						
	3	38.	44. 8	37. 2. 17	35. 20. 14	33. 38. 1	31. 55. 39									
Pollux.	3	-	-	-	-	-	-	-	-	73. 25. 20	71. 40. 1	69. 54. 17	68. 8. 10			
	4	66.	21. 40	64. 34. 48	62. 47. 37	61. 0. 6	59. 12. 15	57. 24. 6	55. 35. 42	53. 47. 2						
	5	51.	58. 7	50. 9. 0	48. 19. 41	46. 30. 12	44. 40. 34									
Regulus.	5	-	-	-	-	-	-	-	-	81. 14. 44	79. 23. 10	77. 31. 24	75. 39. 25			
	6	73.	47. 15	71. 54. 55	70. 2. 26	68. 9. 51	66. 17. 8	64. 24. 20	62. 31. 30	60. 38. 37						
	7	58.	45. 41	56. 52. 46	54. 59. 54	53. 7. 4	51. 14. 17	49. 21. 35	47. 29. 1	45. 36. 34						
	8	43.	44. 16	41. 52. 8	40. 0. 14	38. 8. 34	36. 17. 8	34. 25. 57	32. 35. 8	30. 44. 40						
	9	28.	54. 33	27. 4. 53	25. 15. 40	23. 26. 58	21. 38. 47									
	9	-	-	-	-	-	-	-	-	75. 22. 35	73. 32. 37	71. 42. 58	69. 53. 38			
Spica $\pi$	10	68.	4. 37	66. 15. 56	64. 27. 36	62. 39. 36	60. 51. 57	59. 4. 39	57. 17. 44	55. 31. 10						
	11	53.	44. 58	51. 59. 9	50. 13. 42	48. 28. 38	46. 43. 57	44. 59. 39	43. 15. 43	41. 32. 11						
	12	39.	49. 2	38. 6. 16	36. 23. 53	34. 41. 54	33. 0. 18	31. 19. 6	29. 38. 18	27. 57. 55						
The Sun.	13	26.	17. 55													
	10	125.	0. 57	123. 19. 46	121. 38. 54	119. 58. 23	118. 18. 13	116. 38. 23	114. 58. 55	113. 19. 48						
	11	111.	41. 2	110. 2. 38	108. 24. 36	106. 46. 55	105. 9. 36	103. 32. 39	101. 56. 4	100. 19. 51						
	12	98.	43. 59	97. 8. 29	95. 33. 21	93. 58. 34	92. 24. 8	90. 50. 3	89. 16. 18	87. 42. 55						

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	13	86. 9. 52	84. 37. 9	-	-	83. 4. 45	81. 32. 41	-	-	80. 0. 56	78. 29. 30	78. 29. 30	76. 58. 22	75. 27. 32	75. 27. 32	75. 27. 32	75. 27. 32
	14	73. 57. 1	72. 26. 47	-	-	70. 56. 51	69. 27. 11	-	-	67. 57. 48	66. 28. 41	66. 28. 41	64. 59. 50	63. 31. 14	63. 31. 14	63. 31. 14	63. 31. 14
	15	62. 2. 53	60. 34. 47	-	-	59. 6. 54	57. 39. 16	-	-	56. 11. 52	54. 44. 42	54. 44. 42	53. 17. 45	51. 51. 0	51. 51. 0	51. 51. 0	51. 51. 0
	16	50. 24. 29	48. 58. 9	-	-	47. 32. 0	46. 6. 3	-	-	44. 40. 17	43. 14. 42	43. 14. 42	41. 49. 18	40. 24. 4	40. 24. 4	40. 24. 4	40. 24. 4
	17	38. 59. 0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
α Pegasi.	22	-	-	-	-	-	-	-	-	59. 54. 35	58. 29. 39	58. 29. 39	57. 4. 51	55. 40. 11	55. 40. 11	55. 40. 11	55. 40. 11
	23	54. 15. 39	52. 51. 16	-	-	51. 27. 4	50. 3. 3	-	-	48. 39. 13	47. 15. 33	47. 15. 33	45. 52. 8	44. 28. 58	44. 28. 58	44. 28. 58	44. 28. 58
	24	43. 6. 2	41. 43. 24	-	-	40. 21. 6	38. 59. 7	-	-	37. 37. 29	-	-	-	-	-	-	-
	24	-	-	-	-	-	-	-	-	78. 36. 32	77. 7. 52	77. 7. 52	75. 39. 7	74. 10. 18	74. 10. 18	74. 10. 18	74. 10. 18
α Arietis.	25	72. 41. 24	71. 12. 26	-	-	69. 43. 21	68. 14. 11	-	-	66. 44. 54	65. 15. 31	65. 15. 31	63. 46. 0	62. 16. 21	62. 16. 21	62. 16. 21	62. 16. 21
	26	60. 46. 35	59. 16. 41	-	-	57. 46. 38	56. 16. 26	-	-	54. 46. 4	53. 15. 32	53. 15. 32	51. 44. 49	50. 13. 56	50. 13. 56	50. 13. 56	50. 13. 56
	27	48. 42. 52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	27	81. 35. 37	80. 4. 35	-	-	78. 33. 21	77. 1. 52	-	-	75. 30. 10	73. 58. 13	73. 58. 13	72. 26. 2	70. 53. 34	70. 53. 34	70. 53. 34	70. 53. 34
Aldebaran.	28	69. 20. 51	67. 47. 51	-	-	66. 14. 34	64. 40. 59	-	-	63. 7. 8	61. 32. 59	61. 32. 59	59. 58. 32	58. 23. 47	58. 23. 47	58. 23. 47	58. 23. 47
	29	56. 48. 44	55. 13. 22	-	-	53. 37. 40	52. 1. 41	-	-	50. 25. 22	48. 48. 44	48. 48. 44	47. 11. 47	45. 34. 33	45. 34. 33	45. 34. 33	45. 34. 33
	30	43. 57. 1	42. 19. 12	-	-	40. 41. 7	39. 2. 45	-	-	37. 24. 7	-	-	-	-	-	-	-
	30	-	-	-	-	-	-	-	-	79. 0. 8	77. 19. 23	77. 19. 23	75. 38. 13	73. 56. 36	73. 56. 36	73. 56. 36	73. 56. 36
Pollux.	31	72. 14. 34	70. 32. 6	-	-	68. 49. 12	67. 5. 53	-	-	65. 22. 9	63. 38. 0	63. 38. 0	61. 53. 27	60. 8. 30	60. 8. 30	60. 8. 30	60. 8. 30
	1. 1	58. 23. 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.*

Stars Names.	Days	Noon.		III <sup>h</sup> .		VI <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
The Sun.	1	113. 39. 22		115. 9. 25		116. 39. 53		118. 10. 45		119. 42. 2							
α Aquilæ.	1	64. 32. 15		65. 56. 37		67. 21. 37		68. 47. 17		70. 13. 36		71. 40. 32		73. 8. 3		74. 36. 10	
	2	76. 4. 51		77. 34. 5		79. 3. 51		80. 34. 8		82. 4. 55							
α Pegasi.	2	- - -		- - -		- - -		- - -		34. 17. 47		35. 50. 38		37. 24. 35		38. 59. 37	
	3	40. 35. 38		42. 12. 39		43. 50. 31		45. 29. 14		47. 8. 49		48. 49. 7		50. 30. 6		52. 11. 46	
	4	53. 54. 7		55. 37. 4		57. 20. 35		59. 4. 39		60. 49. 16		62. 34. 22		64. 19. 57		66. 5. 58	
	5	67. 52. 23															
	6	24. 16. 31		26. 4. 46		27. 53. 34		29. 42. 53		31. 32. 40		33. 22. 55		35. 13. 30		37. 4. 27	
α Arietis.	7	38. 55. 45		40. 47. 17		42. 39. 2		44. 31. 0		46. 23. 11		48. 15. 30		50. 7. 57		52. 0. 29	
	8	53. 53. 5															
Aldebaran.	7	22. 10. 42		23. 56. 39		25. 43. 25		27. 30. 55		29. 19. 1		31. 7. 42		32. 56. 45		34. 46. 8	
	8	36. 35. 52		38. 25. 38		40. 15. 28		42. 5. 23		43. 55. 21		45. 45. 15		47. 35. 3		49. 24. 46	
	9	51. 14. 24		53. 3. 52		54. 53. 8		56. 42. 13		58. 31. 6		60. 19. 45		62. 8. 8		63. 56. 15	
	10	65. 44. 7		67. 31. 41		69. 18. 57		71. 5. 55		72. 52. 34		74. 38. 54		76. 24. 54		78. 10. 33	
	11	79. 55. 52															
Pollux.	11	38. 14. 55		39. 58. 29		41. 41. 52		43. 25. 1		45. 7. 57		46. 50. 39		48. 33. 6		50. 15. 17	
	12	51. 57. 12		53. 38. 50		55. 20. 9		57. 1. 12		58. 41. 57		60. 22. 24		62. 2. 33		63. 42. 23	
	13	65. 21. 55															

Stars Names.	Days	Noon.		III <sup>h</sup> .		V <sup>h</sup> .		IX <sup>h</sup> .		Midnight.		XV <sup>h</sup> .		XVIII <sup>h</sup> .		XXI <sup>h</sup> .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	13	28.21.4	30.0.9	31.39.1	33.17.40	34.56.4	36.34.15	38.12.11	39.49.53	47.54.41	49.30.54	51.6.54	52.42.39	54.12.11	56.48.11	58.24.11	59.50.11
	14	41.27.20	43.4.32	44.41.30	46.18.13	47.54.41	49.30.54	51.6.54	52.42.39	60.38.4	62.12.30	63.46.43	65.20.45	67.13.39	68.58.11	70.34.15	72.10.11
	15	54.18.10	55.53.28	57.28.33	59.3.25	60.38.4	62.12.30	63.46.43	65.20.45	73.8.0	74.40.55	76.13.39	77.46.13	79.13.39	80.58.11	82.34.15	84.10.11
	16	66.54.34	68.28.12	70.1.39	71.34.55	73.8.0	74.40.55	76.13.39	77.46.13	81.24.48	82.56.16	84.32.12	86.8.43	88.12.11	89.58.11	91.34.15	93.10.11
	17	79.18.37	81.2.12	82.56.16	84.32.12	86.8.43	88.12.11	90.58.11	92.34.15	94.10.11	95.50.11	97.26.16	99.2.11	100.58.11	102.34.15	104.10.11	106.10.11
Spica $\alpha$ .	17	25.17.58	26.49.49	28.21.35	29.53.14	31.24.48	32.56.16	34.27.38	35.58.52	43.33.39	45.4.18	46.34.50	48.5.16	49.58.11	51.34.15	53.10.11	54.46.13
	18	37.30.3	39.1.6	40.32.4	42.2.54	43.33.39	45.4.18	46.34.50	48.5.16	51.24.48	52.46.16	54.27.38	56.48.11	58.24.11	60.0.11	61.36.11	63.12.11
	19	49.35.35	51.6.54	52.46.16	54.27.38	56.48.11	58.24.11	60.0.11	61.36.11	63.12.11	64.38.11	66.13.39	68.39.11	70.15.11	71.41.11	73.17.11	75.43.11
	24	37.47.41	39.8.53	40.30.8	41.51.27	43.12.49	44.34.16	45.55.47	47.17.23	54.6.47	55.29.0	56.51.22	58.13.52	59.36.11	61.12.11	62.38.11	64.14.11
	25	48.39.4	50.0.50	51.22.43	52.44.42	54.6.47	55.29.0	56.51.22	58.13.52	65.8.43	66.32.12	67.55.54	69.19.48	71.41.11	73.17.11	74.43.11	76.19.11
The Sun.	26	59.36.30	60.59.18	62.22.15	63.45.24	65.8.43	66.32.12	67.55.54	69.19.48	76.22.47	77.48.7	79.13.44	80.39.37	81.39.37	83.15.11	84.41.11	86.17.11
	27	70.43.55	72.8.16	73.32.52	74.57.42	76.22.47	77.48.7	79.13.44	80.39.37	87.53.35	89.21.20	90.49.26	92.17.53	93.45.25	95.11.25	96.37.11	98.13.11
	28	82.5.47	83.32.16	84.59.3	86.26.10	87.53.35	89.21.20	90.49.26	92.17.53	99.45.43	101.16.24	102.47.32	104.19.5	105.45.25	107.11.25	108.37.11	110.13.11
	29	93.46.41	95.15.51	96.44.25	98.15.21	99.45.43	101.16.24	102.47.32	104.19.5	112.3.8	113.37.16	115.11.50	116.46.52	118.12.11	119.38.11	121.14.11	122.40.11
	30	105.51.2	107.23.25	108.56.13	110.29.28	112.3.8	113.37.16	115.11.50	116.46.52	124.48.47	126.14.11	127.40.11	129.6.11	130.32.11	131.58.11	133.24.11	134.50.11
$\alpha$ Aquila.	31	118.22.20	119.58.16	121.34.39	123.11.29	124.48.47	126.14.11	127.40.11	129.6.11	65.19.43	67.42.27	69.5.46	70.29.38	71.55.46	73.21.11	74.47.11	76.13.11
	28	-	-	-	-	-	-	-	-	77.36.49	79.3.45	80.31.10	81.59.4	83.27.11	84.53.11	86.19.11	87.45.11
	29	71.54.2	73.18.58	74.44.25	76.10.22	77.36.49	79.3.45	80.31.10	81.59.4	-	-	-	-	-	-	-	-
$\alpha$ Pegasi.	30	83.27.24	-	-	-	-	-	-	-	41.51.25	43.26.8	45.1.39	46.37.59	47.63.11	49.18.11	50.44.11	52.0.11
	31	35.41.48	37.12.46	38.44.42	40.17.36	41.51.25	43.26.8	45.1.39	46.37.59	54.50.36	56.31.8	58.12.17	59.54.1	61.30.21	63.6.11	64.32.11	66.8.11
	J.1	48.15.7	49.52.57	51.31.29	53.10.42	54.50.36	56.31.8	58.12.17	59.54.1	-	-	-	-	-	-	-	-

The SATELLITES of JUPITER

are *not visible* this Month,

JUPITER being *too near* the SUN.

# EXPLANATION AND USE OF THE ARTICLES

CONTAINED IN THE

ASTRONOMICAL and NAUTICAL EPHEMERIS.

**I**T may be proper first to premise, that all the Calculations of the *Ephemeris* are made according to the apparent Time by the Meridian of the *Royal Observatory at Greenwich*: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the III<sup>d</sup>, IV<sup>th</sup>, V<sup>th</sup>, VI, and VII<sup>th</sup> Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of *Greenwich*.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours belong to January 11 at Three in the Morning by Civil Reckoning.

There are XII Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: the second the Day

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of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of New and full Moon, and, of the first and last Quarter of two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of  $60^{\circ}$  North and  $40^{\circ}$  South: The Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by *Bayer's* Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emerision, to signify the Re-appearance of the same. Thus  $8^d. 16^h. 22^m. D. 3. \nu$ , signifies that the Moon will be in Conjunction with the Star  $3. \nu$  on the Eighth Day at  $16^h. 22^m$ , exclusive of Parallax: And  $10^d. 9^h. 14^m. Im. of \pi. 10^d. 10^h. 23^m. Em.$  signifies that the Moon will eclipse  $\pi$  on the 10th. Day, the Immersion being at  $9^h. 14^m$ . and the Emerision at  $10^h. 23^m$ , apparent Time at *Greenwich*.

The Occultations set down are those only visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixed Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers, or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris*, and converting it into Degrees, at the Rate of  $15^{\circ}$  to One Hour, &c. or more briefly by Table XIV. page 38 of the 2d Edition of the Tables requisite to be used with the *Ephemeris*. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixt Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the second Page of the Month contain the Day of the Week and Month as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made Use of in most of the succeeding Calculations of the *Ephemeris*, and may serve either to verify them or to make other similar Calculations at a different Time of the Day: Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as  $24^h$ . is to the Hour from Noon reckoned by the Meridian of *Greenwich*, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to  $15^{\circ}$ . and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich*. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at  $4^h. 35'$ , being in  $21^{\circ}. 15'$  Longitude East of *Greenwich*. The Difference of Longitude turned into Time is  $1^h. 25'$ , which subtracted from  $4^h. 35'$  because the Place is East of *Greenwich*, leaves  $3^h. 10'$  for the Time re-

duced to the Meridian of *Greenwich*. The Sun's Longitude the preceding Noon is  $9^{\circ}. 29^{\circ}. 18'. 2''$ , and the following Noon it is  $10^{\circ}. 0^{\circ}. 19'. 4''$ , the Difference is,  $1^{\circ}. 1'. 2''$ , or  $61'. 2''$ , the daily Variation. Then say, as  $24^h$ . is to  $3^h. 10'$ , so is  $61'. 2''$ , to  $8'. 3''$ , which added to  $9^{\circ}. 29^{\circ}. 18'. 2''$ , the Sun's Longitude on the preceding Noon, gives  $9^{\circ}. 29^{\circ}. 26'. 5''$ , the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose the Sun's right Ascension at the preceding Noon, together with the increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Times serves also to compute the apparent Time of a known Star passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must

be found to the time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; *viz.* subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0<sup>h</sup>. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's places set down for Midnight were computed to 12<sup>h</sup>. increased or diminished by the Equation of time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the *Ephemeris*, all the

Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Time-keepers should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1'. to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, Page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Center, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Co-sine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1'. to 15'. and 1" to 15" gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Co-sine of his Declination to the logistick Logarithm of his Semidiameter, the Sum is the logistick Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Center; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centers. It is also useful to Astronomers to verify or ascertain the exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Versed Sine of the uneclipsed Part has been measured with the Micrometer. The Semidiameters of the Sun in *Mayer's* Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be 16' 2", 8, which *Mr. Mayer* says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this

Opportunity to remark, that the Quadrant here mentioned was given to the *University of Gottingen* by his late Majesty, and was made by that ingenious Artist the late Mr. *John Bird* after the Model of the Eight Feet mural Arch, which he finished for the *Royal Observatory at Greenwich*, and put up there in the Year 1750. Mr. *Mayer* made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at  $23^{\circ}. 28'. 16''$ , which Dr. *Bradley* settled by his Observations, reduced to the Year 1750, at  $23^{\circ}. 28'. 18''$ . The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the rate of about  $\frac{1}{4}$  a Second in a Year. The same Instrument he also used in settling the Elements of his Solar Tables: and it is most probable that with the same he settled his Table of Refractions at the End of his Solar Tables; the Agreement of this Table with Dr. *Bradley's*, see Page 1st of *Requisite Tables* (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than two different Tables.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the ship; in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner's Guide*; Page 49; and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension; the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Directions of the COMMISSIONERS OF LONGITUDE, in 1763, I made a full Trial of the late Mr. *Irwin's* Marine Chair proposed for this Purpose, but could not derive any advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any

Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or 2 Feet focal Length, and Telescopes of Mr. *Dollond's* Construction with two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his Difference of Longitude into Time: See *Requisite Tables*, Page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the apparent Time at which the Eclipse will happen at his Meridian nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time, to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by reflection from a Basin of Water or Quick-silver, or from the horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made  
on

**on Purpose.** It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn by Problems VIII. and IX. Pages 25 and 26 of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the two outer Satellites. The Immersions and Emersions marked with an Asterisk in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any Place, find whether Jupiter be  $8^{\circ}$  above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting, may be found for any Latitude by a Table of semidiurnal Arcs contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set



down in the *Ephemeris*, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semi-diurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semi-diurnal Arc will be more than six Hours, and if they are of contrary Denominations, will be less than six Hours. But it may be easier found whether the Eclipse will be visible at *Greenwich*, or whether it should be properly marked with an Asterisk, by the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772.

The Immerfion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris*, which must be turned into Degrees, &c. by *Requisite Tables*, Page 38; and will be East or West of *Greenwich*, as the Time observed is more or less than that of the *Ephemeris*.

Example: Suppose an Emerfion of the first Satellite should be observed, at the *Cape of Good Hope*, May 9, 1767, at  $10^h. 46'. 45''$  apparent Time: The Time by the *Ephemeris* being  $9^h. 33' 12''$  the Difference is  $1^h. 13'. 33''$ , whence the Longitude of the *Cape* should be  $18^{\circ}. 23'. 15''$  East of *Greenwich*, because the Time supposed to be observed at the *Cape* is more than that of the *Ephemeris*.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which correction applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page IV. serve to know where to look for them in the Heavens, and when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits where it is most material to observe them. They also serve to enable persons less skilled to distinguish them from the fixed Stars. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's Right Ascension at Noon in Time from it, to find the Time of the

**Planet's** passing the Meridian nearly, which call  $T$ ; take the difference of the  $\odot$  and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right ascension, or the Sum; if it is retrograde, which call  $X$ ; then say by the Rule of proportion;

As  $14^h \mp X : T :: X : e$  and  $T \pm e$  will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to  $X$  and  $e$  if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the  $\odot$  and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to  $24^h$ . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planets passing the Meridian, found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the Apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767?

The Sun's right Ascension in Time July 1st, is  $6^h 40' 25''$  and July 2d, is  $6^h 44' 33''$  by the *Ephemeris*. Therefore his daily Motion in right Ascension is  $4'. 8''$ . The Moon's right Ascension July 1st at Noon by the *Ephemeris* is  $159^\circ 2'$ , answering to  $10^h 36'. 8''$  of Time, and July 2d is  $160^\circ 39'$ , answering to  $11^h 18'. 36''$ . The Difference is  $42'. 28''$  of Time, from which  $4'. 8''$  being subtracted, leaves  $38'. 20''$ . Subtract  $6^h 40'. 20''$ , the Sun's right Ascension July 1st at Noon, from  $10^h 36'. 8''$  the Moon's right Ascension the same Noon, the Remainder  $3^h 55'. 43''$  is the Approximate Time of the Moon's passing the Meridian. The proportional Part of  $38'. 20''$ , answering to this, is  $6'. 17''$ , and the proportional Part of  $6'. 17''$  is  $9''$ ; therefore  $6'. 17''$  and  $9''$ , or  $6'. 26''$  added to  $3^h 55'. 43''$  give  $4^h 2'. 9''$ , the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is  $4^h 2'$ . It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, and XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, Horizontal Parallax, with its proportional Logarithm, are computed Twice a Day to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at  $16^h. 22'. 16''$ .

First to find the Longitude.

The Moon's Longitude, July 16, at  $12^h. 10^o. 6'. 40''. 25'''$ , and July 17, at Noon,  $0^o. 13^o. 47'. 48''$ , the Difference  $7^o. 7'. 23''$  is the Moon's Motion in 12 Hours; say then by the Rule of Proportion:

As  $12^h$  is to  $4^h. 22'. 16''$  (the excess of  $16^h. 22'. 16''$  above  $12^h$ ) so is  $7^o. 7'. 23''$  to  $2^o. 35'. 41''$ ; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's *Sexagesimal Table*, Page 244—247: For this Purpose take out of the *Ephemeris* the two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows;

	D's Long. by the <i>Ephemeris</i>	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	. . . . "	. . . . "		
July 16, Noon	11. 29. 29. 34	7. 10. 51	' "	' "
Midnight	0. 6. 40. 25	7. 7. 23	3. 28	
17, Noon	0. 13. 47. 48	7. 3. 39	3. 44	3. 36
Midnight	0. 20. 51. 27			

Take their Differences  $7^o. 10'. 51''$ ,  $7^o. 7'. 23''$ ,  $7^o. 3'. 39''$ ; take the Differences of these Differences, or the second Difference  $3'. 28''$ ,  $3'. 44''$ ; and take their Mean which is  $3'. 36''$ . Now look for the Equation of second Difference, answering to  $4^h. 22'$  after Midnight, found on the Side, and  $3'. 36''$  at the Top, which will be found =  $24''$ , and which, according to the Remark at the Bottom of the Table, must be added to  $2^o. 35'. 41''$ , the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing, the Sum  $2^o. 36'. 5''$  added to  $0^o. 6'. 40'. 25''$ , the Moon's Longitude at Midnight, gives  $0^o. 9'. 16'. 30''$ , the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

**N. B.** If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, *vice versa*, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Page 244—247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to, or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 1767,  $16^h.22'.16''$ .

	D's Lat. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	• ' "	' "	' '	' "
July 16, Noon	4. 31. 10 N.	18. 26	' '	' "
Midnight	4. 49. 36	13. 50	4. 36	4. 40
17, Noon	5. 3. 26	9. 6	4. 44	
Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being  $4^{\circ}.49'.36''$  N. and the Motion in the next 12 Hours being  $13'.50''$  say by Proportion,

As  $12^h$  is to  $4^h.22'.16''$ , so is  $13'.50''$  to  $5'.2''$ : but this must be corrected by adding  $32''$ , the Equation of second Difference, answering to the Hour  $4^h.22'$ , and the Mean second Difference  $4'.40''$ , because the first Differences are decreasing, or rather because the first of them  $18'.26''$ , is greater than the last of them  $9'.6''$ , therefore the proportional Part corrected is  $5'.2'' + 32'' = 5'.34''$ , which added to  $4^{\circ}.49'.36''$ , gives  $4^{\circ}.55'.10''$  N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or *vice versa*, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Page 244—247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease, and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244—247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed  $2\frac{1}{2}$ , this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page VI. and VII. *viz.* the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables*.

The Moon's Longitude and Latitude are used in computing the Distances from the Sun and Stars contained in the four last Pages of

the Month, as well as the Appulses to Stars pointed out in Page I, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57, and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93, and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. Edwards's 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from Sun and fixed Stars, contained in the VIIIth, IXth, Xth and XIth Pages of the Month are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is not a Remark unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between  $40^{\circ}$  and  $120^{\circ}$  of Distance. While the Moon is between the Distances of  $20^{\circ}$  and  $40^{\circ}$  from the

Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of  $40^{\circ}$  and  $90^{\circ}$  from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above  $90^{\circ}$  from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from  $90^{\circ}$  to  $120^{\circ}$ . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the help of the *Ephemeris*, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between  $90^{\circ}$  and  $120^{\circ}$ . distant from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables, as corrected from a Series of Dr. *Bradley's* Observations of 9 Years, by Mr. *Charles Mason* in 1778, being these made use of for the *Nautical Almanac* of 1789, and the subsequent ones, probably never exceeding  $30''$ , the Uncertainty hence arising in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*, and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables*, Page 38,

and adding it to or subtracting it from the apparent Time at the ship, as its Longitude is West or East of *Greenwich*. It will be sufficient if the distance be computed from the *Ephemeris* within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by comparison with the corresponding Distances observed at Sea, is shewn in Problem XI. Page 37 of *Requisite Tables*.

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours according to the Method shewn for computing the Moon's Latitude, Page 157—158; except that the Correction of second Differences at the middle of the Interval to be interpolated, was taken  $\frac{1}{8}$  of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken  $\frac{3}{4}$  of the Correction just found at the Middle of the Interval; instead of consulting Mr. *Taylor's* Table, Page 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. *Phil. Nat. Princ. Math.* Page 486 Edit. *Londini* 1726, or Dr. *Horsley's* complete Edition of Sir *Isaac Newton's* Works, Vol. 3d. Page 128.

From Four Distances at Noon and Midnight computed strictly to interpolate Three Distances at the III<sup>d</sup>, VI<sup>th</sup>, and IX<sup>th</sup> Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like Manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by  $b$ ; the first or last second Difference by  $c$ , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by  $d$ , and,  $a$  being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

$$\text{At III<sup>d</sup> Hour of first Interval } a + \frac{1}{4}b - \frac{3}{32}c + \frac{1}{128}d$$

$$\text{At VI<sup>th</sup> Hour of first Interval } a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$$

$$\text{At IX<sup>th</sup> Hour of first Interval } a + \frac{3}{4}b - \frac{3}{32}c + \frac{1}{128}d$$

Or,

$$\text{At III<sup>d</sup> Hour of last Interval } a + \frac{1}{4}b - \frac{3}{32}c - \frac{1}{128}d$$

$$\text{At VI<sup>th</sup> Hour of last Interval } a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$$

$$\text{At IX<sup>th</sup> Hour of last Interval } a + \frac{3}{4}b - \frac{3}{32}c - \frac{1}{128}d$$

X



In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if  $b$ ,  $c$ , or  $d$  is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of  $\frac{1}{12}$  third Difference; which will be corrected, by applying  $+\frac{1}{12}d$  or third Difference, to Number found at the first Quarter of the Interval, and  $-\frac{1}{12}d$  to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark  $\bigcirc$ , and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher  $\bigcirc$ , sometimes annexed to the Figure of the Satellite towards the Margin, signifies, that it is invisible on the Face of Jupiter; and the black Mark  $\bullet$  signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his body.

THE END.









OCT 1<sup>st</sup> 1928

